DOCUMENT RESUME

ED 244 534 HE 017 237

TITLE Public Hearing on Education for the Gifted and Talented. (Cambridge, Massachusetts, October 15, 1982). Volume I.
INSTITUTION National Commission on Excellence in Education (ED), Washington, DC.
PUB DATE 15 Oct 82
NOTE 147p.; For Volumes II and III, see HE 017 238-239. For other related documents, see ED 225 996, ED 227 096, and HE 017 240-244.
PUB TYPE Legal/Legislative/Regulatory Materials (090) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC06 Plus Postage.
DESCRIPTORS *Academically Gifted; Definitions; *Educational Needs; *Educational Quality; Elementary Secondary Education; Financial Support; *Gifted; Hearings; Postsecondary Education; *Student Motivation; Student Needs; *Talent
IDENTIFIERS *National Commission on Excellence in Education

ABSTRACT

Concerns regarding education for the gifted and talented and excellence in education are addressed in this first volume of a 1982 public hearing. Issues considered in the hearing include: the impact of technological advancements on education; the struggle between the conflicting educational goals of excellence and equity; the need to support advanced training in education and other fields; the importance of research funds to develop quality programs for gifted education; the funding of demonstration programs for exemplary gifted education efforts; the need for teachers who are inspirational for gifted individuals; areas of the regular curriculum that need to be considered in meeting the needs of bright youngsters; reasons for declining tests scores; the need to revise current conceptions of talent and talent development at the conceptual level and at the policy level; the need to link special status of able students to excellent performance rather than to a high score on a screening test; a definition of giftedness that includes specific talents, creativity, leadership, and physical ability; and a proposal that a national effort be undertaken to replace current measures of general academic promise with more refined, specific diagnostic instruments. (SW)

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VOLUME I

PAGES 1-145

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ED244534

NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION

Education for the Gifted and Talented

Cambridge, Massachusetts

October 15, 1982

NIE 017 237

U.S. DEPARTMENT OF EDUCATION
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Public Hearing before the National Commission on Excellence in Education on EDUCATION FOR THE GIFTED AND TALENTED, held in the Gutman Library Conference Area, Harvard University, Cambridge, Massachusetts, on Friday, October 15, 1982, commencing at 8:30 o'clock a.m..

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SITTING: Commissioner WILLIAM O. BAKER, Presiding;
Commissioner DAVID P. GARDNER, Chairman;
Commissioner CHARLES A. FOSTER, Jr.;
Commissioner RICHARD L. WALLACE:
Commissioner MARGARET S. MARSTON;
Commissioner ANNE CAMPBELL;
Commissioner GERALD HOLTON.

—

Welcoming Remarks from Hosts

Mr. DEREK C. BOK (President, Harvard University). Good morning. It is wonderful that you are all here. We are very happy to welcome the Commission and all of you who have come today.

Certainly, you have chosen an enormously timely subject. Even as a layman, I know that, just as the 1970s were called the decade of access and

egalitarianism, the 1980s seem to be the decade of quality and excellence.

I hope we can all take those words mostly as artifacts of the media and not take them too seriously, because they certainly are not, in any sense, mutually exclusive. I think, ten years ago, a conference at a major university on the subject of the education of the specially gifted would have been severely criticized as elitist or perhaps even worse, and that, of course, would have been very wrong because these catchwords for each of the decades are really not only both important, but very strongly complimentary. Certainly, that has never been more true than it is at the present time.

We know, from looking at demographic trends, that the number of people entering the work force every year is getting progressively smaller. There will be over 20 per cent fewer high school graduates ten years from now than there were just a few years ago, at a time when the needs for well-educated, talented, well-trained people in society are presumably growing all the time. That means, to me, at least, a heightened need for access and opportunity, not only for their own sake, not only

for social justice, but because we need to mobilize every bit of talent that we have in the country to meet our common demands for making a progressive society work better. And, having mobilized that talent, we need to know how to educate it, how to nurture it, how to develop it as best we can because we will not have any talent in our society that we can afford to waste.

So, in that spirit, this is an enormously important subject. We are delighted to have even this small part in helping the Commission in its important work. We salute what you are doing, we wish you well, we hope that anything we can do to move your work along to a successful conclusion we will be able to carry out. So, welcome to you all, and I wish you the most productive day and a most illuminating and informative final conclusion to your efforts.

Commissioner MARSTON. Mr. Bok, may I ask you a question, please? Here I am.

President BOK. Oh, sure.

Commissioner MARSTON. Excuse me; I didn't mean to startle you.

President BOK. No, not at all. I just didn't

expect a question. (Laughter.) I was hoping that my role was purely ceremonial. (Renewed laughter.)

Commissioner MARSTON. I hope that you will not feel that I am being terribly personal, but it has been brought to our attention that your mother-in-law and father-in-law have received a Nobel Prize, and we at the Commission thought perhaps because you know them very well, you might be able to share what kinds of educational backgrounds they had and if they were identified very early as a gifted student, and if they were tracked. Is this too early to ask such a question?

President BOK. No, not at all, not at all. You are very perceptive to have noted what happened to my family. You know that many families have married for money. I looked at my family very candidly and decided that it was important to marry for brains, (laughter) as I did.

But, as I look at my father-in-law and my mother-in-law, I think it is probably true that my father-in-law was identified somewhat early, but Sweden is such an egalitarian society that I doubt whether he received particularly special privileges. On the other hand, he had an opportunity to have a

good education. He started out as a lawyer and then changed his mind and went into economics. And I suppose, in a sense, at that time, the educational opportunities were somewhat limited. He was fortunate enough to come from a middle-class family that could move easily into that, the educational opportunities that did exist, and take full advantage of them.

I think the case of my mother-in-law is very much more interesting because she was not in that situation. She was the daughter of someone who was very influenced by Rousseau and moved the family out in the country and was really rather opposed to having any books in the house. So, she was only able to read books surreptitiously and then found, at the age of fourteen, that the only schooling opportunities available were restricted to men.

So, she worked as a cashier, instead of going to high school, and then she saved her money so that she would be able to go away to a school that she read about in the newspaper.

And, finally, she got enough money saved and was admitted to the school; but then she noticed that there had to be a paper that her parents had to sign. So, with great trepidation, she brought the

paper to her father who, as I said, had these rather strong anti-institutional beliefs. He tore the paper up, she burst into tears and, at that point, I don't think one could say that she had been specially tracked as someone specially talented, because, indeed, every possible obstacle had been thrown in her way.

Maybe that is a very heartening thing. Maybe it shows that very great talent cannot be kept down very easily because, in one way or another, -- largely through the accident of a bicycle trip that brought her husband of 58 years to their house -- she did manage to escape this environment, get some reasonable education, and then pulled herself up by her own merits in a society at that time not too hospitable to women, to eventually become a United Nations official, an ambassador, a cabinet secretary, and an author.

I don't, for one moment, believe that we can rely on that tale to disregard the importance of educating the specially talented, but it is nice to know that, even if you have a society that slips up in that regard, some people are going to force their way through and realize whatever talents they have.

Excuse me for being so personal, but,

since you asked, I thought I would do my best to tell you.

Commissioner MARSTON. No; thank you very much.

Ms. PATRICIA ALBJERG GRAHAM (Dean, Harvard Graduate School of Education). I think, after Mr. Bok's very important remarks at the beginning and his cautionary tale to those of us who are responsible for institutions of education, I think we need to take into account both the success of Gunnar Myrdahl and Alva Myrdahl, in institutions and not in institutions.

We here at the School of Education accept the responsibility to try and help educate people under whatever circumstances, and we welcome you today.

It is a wonderful opportunity for us here at the School of Education, for our students and for our faculty, to have the opportunity to participate in this hearing. I am delighted, also, that a number of our alumnae are here to take advantage of your coming to town. So, we thank you very much.

It is a particular pleasure for me, too, to have this group come to town, because many of them are former colleagues of mine when I worked in the

government. So, on behalf of those of us here at the School of Education, we welcome you and encourage you to go on with today's activities. Thank you.

Commissioner BAKER. Thank you, Dean Graham and President Bok.

I am Bill Baker, representing the National Commission on Excellence in Education, whose Chairman is David Gardner, and whose fellow Commissioners are Mr. Foster, Mr. Wallace, Ms. Marston, Commissioner Campbell, who are sitting with us here, and we are privileged indeed to sponsor this conference on the role of the gifted and talented in excellence in education. I am delighted that Mr. Bok was willing to illustrate, so modestly and amiably, the feelings that we have for this environ, and for the auspicious qualities of it in pursuing matters of excellence.

I am tempted to go on to assure you that Mr. Bok's generic plan for the Bok family has worked in many forms. For instance, those of us who were privileged to participate in the graduation of a daughter a couple of years ago can affirm very strongly that his intention for the student of intelligence has succeeded.

We, in other ways, as well, are grateful

to be here in this historic region noted for the pursuit of excellence and the matters of the mind and, again, there are many illustrations associated with this University.

The attraction of the attention of the Nobel Committee seems to be endemic in that celebrating 200 years of excellence in the Medical School, Mr. Bok and his colleagues generated a couple of Nobel Prizes in physiology and medicine on the spot. My colleague, Mr. Bergstrom, was once a student of his.

So, we are fortunate to be guests of this University and able to recall also Dean Graham's distinguished work for the nation in other times in your role in Washington and elsewhere.

With respect to the conduct of the hearings, we are grateful for all sorts of help from Mr. Roberts and the staff of the Department's Regional Office, and the staff of the State Educational agencies here. We were much helped by Mr. Crowley with a variety of very warm hosts and hostesses, and yesterday, several of the Commissioners were able to participate in two site visits, including those to the Buckingham-Browne & Nichols School, with Mr. Gunness, the Headmaster, and the Brookline High School, where Mr. McCarthy is

the Headmaster. And we have been favored by fortune in being able to meet with many of our associates in the State Boards of Higher Education who were having a major conference here as well.

Through the hearing agenda, we hope to bring out, thanks to the skilled conferees who have agreed to join us, the elements of the education of the gifted and talented in which the Commission can be active, and we shall have those witnesses and those introductions to our discussion this morning, when each of the experts will have about twelve minutes for a statement at this podium and, in that time, will be able to make just a very quick summary of what they are able to say, and their complete statements will be included in the written record of the hearing.

We shall then, after the group of presentations, have some general discussion and, from about 12:00 o'clock to 1:00, we shall adjourn for lunch, and the hospitality of the region again has provided a nearby cafeteria across the street at Longfellow Hall for luncheon for the audience.

In the afternoon, we will announce the schedule of public witnesses who will testify during

the afternoon, and we shall hear, also, from some individuals.

Those of you who are interested in presenting testimony should fill out a registration card at the entrance table during the morning break, which will be, perhaps, at about 10:30.

And, as we said, we are fortunate to be guests of the University and having the chance to explore this empire and the primary theme of excellence instilled into our mission by Secretary Bell, and carried forward as the principal goal of this effort by Dr. Gardner and his associates.

It is through these specially talented and gifted graduates of our schools and colleges that we carry forward the intellectual and professional genius of our nation and that we can claim excellence and aspire to greatness in our affairs. And I say that with strong feeling as a consumer in the enterprise in which I have spent a lifetime, which is, of course, entirely dependent on these graduates, and we are hoping to reflect in this hearing something about what happens to people who are educated and who have development of special gifts and talents.

We must, however, be mindful of Milton's

lines in Paradise Lost, which said, "Consider first, that great or bright infers not excellence." This does tell us again that excellence means merit, goodness, virtue, and superiority, that which is raised, elevated and surpasses. It is not the ordinary dimension of "brightness" alone or "greatness" alone, of mind or body. It is rather for the individuals, those whom we are considering specially today, to have a sustained height of skills and being, sustained and often initiated by their education.

So, what can we expect to say today that is new or notable about this, which is one of the missions of all history? Education with all of its needs and meanings has not lacked discussion or definitions. It is full of one-liners, like Mark Fischer's, who said that education is "the process of driving a set of prejudices down your throat," or Trader Horn, who was a bit more philosophic in saying, "that education teaches you to walk alone". In fact, we do believe, however, that this nation and this government, this Federal Government, can do new things with and for the role of education in recognition and cultivation of those gifted and talented for whom

excellence in living and doing is a reality as well as a goal.

The reason for this bold presumption is largely in the historic circumstances of the 20th Century condition, which President Bok has already touched on with such eloquence. This condition is often named the Computer Age, the Information and Communication Age, the Knowledge Age, and it is a particular joining of our civilization with science and engineering. These conditions, including such derivatives as national security concerns with such eloquence as nuclear weapons, have led us to the Space Age, in which, as you remember, those of us who were tasked to try to meet that challenge, chose education and major evolutions during the '50s and '60s, as particular goals. These derivatives, which have now resulted in some of the superb ventures of human outreach, have given new and unprecented emphasis to mentality, whether in the exploration of space, whether in the exploration of the cell, or whatever else.

And these heroes of science and technology, even of space navigation and biological and ecological endeavors like the Green Revolution, they all depend on learning, a new condition for heroism, in many

respects.

They need all the other basic virtues, of course, the students we are talking about do -- the virtues of diligence, strength, stability, commitment, and energy, but knowledge is the essence of their actions, and this is knowledge that is organized, accumulated, and refined, worthy, by an historical exercise of scholarship, and it adds up, of course, to what all of you here are committed to, and that is education.

And, in addition to that, our livelihood, our national strength, our gross national product are coming from the service industries. The use of knowledge and the handling of information, in forms that are quite new and unfamiliar to many. And so, we as consumers, as citizens, and as the ones who depend on these new functions of mentality, are aware of the pervasion of it into both ordinary and extraordinary affairs.

Leading this new role of knowledge and learning have been the science and technology of electromagnetic and accoustic and optical waves, and I shall be provincial for a moment, in a field that one knows better than others. It is not the suggestion

that this is the only thing, but it is an important one.

And it has been found in the century of the invention of the telephone here in Boston, not far from this site, by Dr. Bell, and in the somewhat longer period of the telegraph, it has been found in that historic time, and found, as a matter of fact, mostly since the mid-Century, that the output of thought, the human expression in voice and vision, can be approximated (in volume and speed even enhanced) by electrical analog waves and digital pulses. And these nature has let us put into the machines of this century. For such communication and computer systems as arise from these waves of anticipation are truly the wheels for knowledge transport, and the engines of organizing societies, nations, economies, and resources.

And so, on the one hand, the creation of this era, in which one has seen in the work with Brattain, Bardeen and Shockley on the transistor; Townes and Schawlow on the laser; Stibitz on the electrical digital computer; and Shannon, who is now here in Cambridge, on the information theoretic base; all those being samples in our own laboratories, those

all have required themselves, as new creations, new levels of excellence in generations of students and research and development exponents. Those are but examples of the challenges we are talking about which say that we had better find the brighter people, we had better educate them, and we had better challenge and cultivate them. Indeed, these are levels of excellence. They have generated, in technological and scientific ways, a milieu for the meaning of knowledge, the possibilities of learning, which enhances all of the history of this before, and is a track on which we shall work today and which our tutors in this study will tell us of. We shall hear about the challenges that the gifted and talented need and, in fact, want.

Just to conclude with an emphasis on what these new forces mean, as you know, it is pretty well established that the basic dimensions of human action from the mind, not necessarily of thought, but of virtually all human action, those dimensions are about 40 bits a second in reading, and writing, and calculating, and reasoning, in speaking, and in hearing. And that is being related to dimensions in machines, which are dramatically different. In them, a single chip, which is hand-held, can easily do a million bits a second.

Larger assemblies of circuits range all the way up to the gigabit per second processes of megacomputers and to the horizon which we are pursuing eagerly of the pico second or million million processes per second of the machines to come. So we have at least a million, and on one frontier a million million, rise in how the doings of the mind can be aided and augmented. This might be thought of in comparison to rocket propulsion where that multiplying factor for the physical movement of people is only about a thousand times.

We may need no more reminders of this impact, and we know that the role of video in arcades or CAD/CAM in industry are evermore daily imbedded in our culture. But these things all do impel us to ponder more deeply how we are relating this vast change in learning and in knowledge to excellence. How do we connect it to the best minds of the gifted and talented students and spirits of youth? All have about the same number of neurons, and one of our speakers will tell us about that element, which is, after all, the physiological space. They all have about the same number of neurons and synapses, but their management of logic, and memory, and of the reaches far beyond these crude analogs, in the mind

can rise far beyond the ordinary.

So, we shall today and in the consequences of this hearing, and the further work of our National Commission, look at the ever restless interplay of education and exceptional minds in these broadened terms. And the already forms that we have suggested of learning this will be looked at, and yet we have to maintain humility in realizing that we still do not understand a single primary process in the signal handling systems of living things including us. Our science and engineering of machines and their software is crude compared to the information system of the living cell.

These issues set a particular tone for these hearings, and it is that excellence in learning must come also to mean excellence in doing. And those possibilities excite us and animate us in all forms. One's own experience with about ten thousand of such gifted and talented graduates who have joined our enterprise in recent times, convinces one deeply that we are yet on the very bare beginning of how to appreciate these components in our society.

So we take this meeting to mean the very opposite of Oscar Wilde's statement that "Nothing that

is worth knowing can be taught." We take rather the principle of the contemporary essayist Joseph Addison, who said that, "Education is leading human souls to what is best . . . it gives at once grace and government to genius . . ."

And, in that perspective of approaching genius, we are honored to have this first session begun by James Gallagher, Director of the Frank Porter Graham Child Development Center of the University of North Carolina at Chapel Hill.

Perspectives on the Gifted and Talented from Research and Practice

Dr. JAMES J. GALLAGHER. Thank you, Dr. Baker.

If I might be allowed a personal comment that would not be charged against my twelve minutes, -- all right; I will hurry it along. I would like to add my congratulations to President Bok for the achievements of members of his family, but also for his distinguished leadership of this host university which we have here; and just as a side comment, to say that I was in Sweden last summer and was impressed by the quality of what I saw there and, also, the very homogeneous nature of that small society, and also

impressed by how different the situation is, the educational situation in Sweden, than in this very diverse, multi-cultural society.

My name is Jim Gallagher. I am a Kenan Professor of Education and Director of the Frank Porter Graham Child Development Center at the University of North Carolina at Chapel Hill. I have been involved in and intrigued by the problems surrounding gifted children in the public educational system for the past 25 years, in Illinois, and Washington, D. C., and for the last 12 years in North Carolina. I am delighted to have a chance to present some thoughts to this Commission.

One of the advantages of being around for so long is to perceive the ups and downs, the ebbs and flows of interest in this topic over time, and my intent today would be to present some specific actions that I believe should be taken to bring both short-range and long-range benefits to this somewhat beleaguered field in education.

There is no doubt, I think, that we as a society have strongly ambivalent feelings about our gifted and talented youth. A strong love-hate relationship seems to exist. We are proud of our

scholars who have achieved fine work; we are also deeply concerned about egalitarianism, and we waver in our attitudes about how thoroughly we should provide special programs for our best students. So, we are struggling with a tug-of-war between two legitimate educational goals, excellence on one hand, and equity on the other.

We have recently seen the 25th anniversary of the Sputnik scare that represented one of the major definable points of great public interest in the education of our most gifted and talented students. Twenty-five years ago, Sputnik caused a massive and somewhat hurried reevaluation of our secondary school programs, mainly in the area of science and mathematics, to determine why we were behind the Soviets. This analysis later spread to all of the content areas and even down to the elementary school level. It resulted in dramatic changes and improvement in the curriculum which benefitted, to a large measure, gifted and talented students.

In 1965, with the combination of desegregation and the problems of Vietnam, the entire initiative seemed to be abandoned. We went through nine years of a latency period/ in which little or nothing was

done specifically in this area.

We are now seeing a revival of interest. Many people believe we are once again having a crisis of confidence in our ability to deal with our problems -- the economy, pollution, world hunger and unrest. When we lose our confidence, paradoxically, we become interested in the gifted.

Coincident with the 25th anniversary of Sputnik, we are now ready to start on a parallel kind of adventure. We are worried about the quality of our teaching of science and mathematics in our schools and the lack of instructors to handle these capable students. Once again, voices of alarm are heard throughout the country.

The specific need, I think, for special programming is illustrated in recent data that we got from our own State of North Carolina. The State of North Carolina requires annual testing of all students at third, sixth, and ninth grades. And the sixth grade data showed clearly that 15 per cent of the students in the State of North Carolina fell below the fourth grade level in reading and fundamental achievement. Fifteen per cent also scored above the eighth and ninth grade levels while

they were in the sixth grade, in achievement.

Now, to ask the teacher to provide the necessary help for those children in deep educational trouble, to the average student, and then to give stimulation to those very advanced students, is to ask what never was and never will be, and that is the reason why we need to have some kind of special programming for these youngsters.

Our task during this period of enthusiasm is to create a permanent infrastructure -- a capability for program improvement that will last beyond the current enthusiasm -- that will survive the downturn of interest when the public's attention is carried on to other things.

I was for three years in the Federal Government, and I learned a couple of things -- one, that it is important to plan for long-range goals, and the second is that we don't do it very well, not at the State level and not at the Federal level. We are surrounded by the evidences of the unintended consequences of public action which nevertheless accumulate to unfortunate results. One specific example I have is a chart in the testimony, a special analysis of the expenditure of research in the United

States made by the Office of Management and Budget. $28 billion is spent on research and development in the United States, in the year 1980, $28 billion. $12.4 billion goes to defense, another $9 billion goes to space and energy, and then one travels down the list -- health, agriculture, transportation -- and, finally, to come at the bottom of the list to $.2 billion on education, as Dean Graham, I am sure, is very well aware.

I suppose one question we could pose to ourselves is, "Who sat down and decided that that was the proper allocation of research and development expenditures in our society?" The answer, of course, is "No one," not the Congress, not the person in the Oval Office, no one individual. Everyone pursuing their own objectives and their own goals added up to that result and, if we wish to change that unintended result, then we had better plan to deliberately do so. It is the opportunity that this Commission has to provide this kind of sensible planning that makes us excited about these hearings.

One of the many ironies in these situations is that we are already well aware of what is needed to provide the kind of catalytic support that would

energize the school systems for these youngsters. We know how to do it in industry, we know how to do it in agriculture, we know how to do it even in education, because we have done it in education; it was for the education of handicapped children. Twenty-five years ago, the education of handicapped children was in deep trouble and mired in incompetency and inefficiency. The careful expenditures of money on the topics that I am going to mention to you has made that a respectable field of education and one that we can be proud of, and the question is, how does one do that? I have five or six suggestions.

The first is the development of leadership personnel. Here we need to support advanced training for people, not only in education, but in the content fields of science, and mathematics, and art, and history, so that these people, specialists in these content fields, become intrigued and interested in gifted education.

During the last year and a half, we have been involved with the National Planning Effort on the Education of Gifted and Talented Students. One of the things we did was survey the needs of teachers, local program directors, state directors of programs,

and we asked them what they needed. The predominant need listed above all the others from the 1200 persons questioned was the need for continuous in-service training for the teachers on the job, to strengthen the capabilities of those teachers on the firing line who are working with these youngsters. This means not a two-hour meeting with a cold cup of instant coffee after school once a month, but continuous weekly in-service training with the teacher given release time to carry on this training.

Research and development. There is probably no greater need than research in the development of quality programs to encourage careful research on various aspects of gifted education. There is a growing trend to earmark those limited research funds to be used for specific purposes, and the gifted have not been a part of that earmarking. It would be important as part of a total program to encourage more curriculum innovation, more specific studies on intellectual processes, and the like, as part of this effort to strengthen and improve programs.

Demonstration programs. The expenditure of small funds of money to make visible innovative and exemplary programs in all parts of the United

States puts a spotlight on successful and practical educational programs for gifted students. These demonstration programs can, in addition, be centers of training and technical assistance and represent a tangible reminder of the importance of these programs.

One fine example of such a demonstration project is the North Carolina School for Science and Mathematics, a residential school for gifted and talented students of high school age paid for by public funds. It is a commitment to excellence on the part of the State of North Carolina in teaching and is a teacher training center, in addition to being an innovative school.

I have some material on this very interesting adventure that I brought with me and I will be delighted to share it with the members of the panel, if they are interested.

Finally, in the area of leadership at the State Department of Education level, the placement of a person or a team of persons that are strongly committed to gifted education in that unit. We have known from the bureaucratic standpoint for a long time that the presence of a committed person in the bureaucracy on this topic yields very positive actions that

can be taken.

We have named a number of different strategies here, leadership training, research and development. We are talking about organizational changes, changing the infrastructure of education. I would remind you that there are 2.1 million elementary and secondary school teachers in this country. If you walk down the street and pass 100 people, one of them, by the law of averages, is an elementary or secondary school teacher. This is the most massive enterprise that we have in our society. To expect to reform it and to expect to reform every one of those 2.1 million teachers is a vain expectation.

What we can do, however, is change the organizational structure to make it more efficient and to allow for the creative abilities of those teachers to come forth in more effective ways, and that is what I am suggesting today.

We have named a number of different strategies -- leadership training, in-service training programs for 50 states, 40 research projects, a couple of demonstration projects in each state, and I have costed this out. What massive amount of money would this add up to? It adds up to $40 million. Now,

my experience in Washington is that $40 million doesn't even show up in the budget of the United States. It is merely an asterisk, because nothing lower than $50 million is even worth writing down.

So, for the cost of $40 million, we can provide leadership training, in-service training, research and development activities, and demonstrations and, for that very small amount of catalytic money, we can do a great deal to improve the educational system for gifted and talented students.

I urge the Commission to seriously consider recommending to the Secretary of Education some of these kinds of concepts and ideas. Thank you very much. (Applause.)

Commissioner BAKER. Thank you, Professor Gallagher, for so expertly showing us the social and societal context in which we may move.

Dr. Kinsbourne is now willing to illustrate the other element, the role of the individual, the qualities of the human being. Dr. Kinsbourne is the Director of the Department of Behavioral Neurology, at the Eunice Kennedy Shriver Center in Waltham.

Dr. MARCEL KINSBOURNE. Members of the Commission, ladies and gentlemen:

The brain determines the intellectual potential. Experience determines the extent to which it can be realized. The diversity -- can you hear me at the back? (Cries of "No!")

Dr. KINSBOURNE. Well, why could you hear him? (Laughter.)

If everybody had optimal opportunity to achieve, there would still be tremendous diversity in accomplishment. Given the fact that experience as such differs greatly, there is even more diversity in accomplishment.

The important point is that there is no kind of experience which can push up the potential set by the biological limitations of the brain, but there are many kinds of experiences that can pull it down.

It follows from this that, within any human group, any ethnic or socio-economic sample, there will be people of high intellectual potential, but none of them will realize their potential unless they are also afforded the opportunity to do so.

Can we tell from the human brain how well it functions or will function? As your Chairman pointed out, there are quite a few neurons in that

brain. Some brains are bigger than others, perhaps because they are full of neurons or sometimes because they are full of water. However, it is important to realize that the size of the brain is no indication of how well it works. This becomes immediately obvious as we consider that the male brain is some 20 per cent larger than the female brain, and yet men know in their hearts that women are smarter.

Nor indeed is it the number of synapses, although they are imperfectly named. In fact, you may not have noticed, but the number of synapses reaches a peak at age 18 months, and it decreases, year by year. For all I know, the faster we lose them, the better we do. I am not asserting this; it is one of three possibilities of what goes on.

So it is not, in fact, the hardware. It is the pattern of usage of that hardware, which is limiting; and I will return to this.

Now, what factors, early factors can effect the evolution of brain maturation and its ultimate excellence? There are organic factors, there are exponential factors. Certainly, early brain damage, certainly, the consequences of severe malnutrition early on can cause so many neurons to be

lost that ultimate function is limited. But I would like to emphasize that that degree of malnutrition. that degree of deprivation, is rare in this country, and it is not permissible to write off the children of the underprivileged as probably having been damaged with regard to their potential; that is not the case.

The brain is greedy for nutrition. It sucks it from the body. It is the last part of the body to suffer from even severe malnutrition.

But how about malnutrition of the mind? How about deprivation of experience? Let me illustrate for you how this works and how it does not work.

Let us suppose a child is put into a plaster cast at age, say, three months, for maybe six to nine months, with a condition such as dislocation of the hips, which is sometimes done. During this period of time, that child cannot move. When the cast is removed, he does not function at a three-month age of maturity; he is at the one-year level. The brain control centers have matured, regardless of whether the activity has occurred. The same is the case for mental development. No type of intellectual starvation can limit the elaboration of

circuitry in the brain, and it is not the case at that critical period, beyond which time what has not been learned cannot be learned.

There are critical periods for certain ducks, but there are not critical periods for people. So it is not the case that something lost early cannot be recovered. If early intervention has not occurred, let's have late intervention. There is no time at which we cannot intervene.

However, that is not to assert that early starvation of the mind does not have ill effects. It has bery serious obvious ones; but they are not of the intellect, but of the emotions. They are attitudes, motivations. They are the adoption of maladaptive styles, of tensions and manipulations and magical thinking, instead of effective effort.

And if those gifted who are, in fact, in deprived circumstances, to be enabled to realize their potential, that is where the effort has to go. It is not so much the inculcation of information. Information is available. It is there and you will find it out. It is in the modeling of a reflective style driven by intellectual curiosity. And, to anticipate my later point, those teachers who

can model that style are the appropriate teachers for the gifted.

So, then the opportunities that are provided early on should be sufficient to sustain intellectual life. Enrichment is a delusion. Enrichment cannot raise the potential of the brain. It is the extent to which a person is willing to pay attention to matters intellectual that determines what he or she achieves.

Let me define mental life in relation to the reaction of the intellect into learning, understanding, and discovery. How are they limited by brain?

Learning, not at all. It is possible for people who are severely retarded to know an awful lot. The Board had an idiot, Savan, who, with an I. Q. of minus something, knows all the ministers of Bulgaria, with legitimate liaisons and combinations. If one pays enough selective attention to anything, one will know it, whatever the level of one's function.

Is there any limit in the brain to how much can be known? There is none. And I will illustrate this with the interesting example of bilingualism.

People have wondered, if there is a language area and there is, for the first language, where does the second language sit? And where does the third language sit? And those people who are members of the Commission who know four to eight to twelve languages, how can they keep them within their heads?

Time after time, it has been found that this is a vain pursuit. The same neurons that do the first language do the second, do the third, do the fourth do the fifth. The same equipment can be used for endlessly diverse purposes.

So, for knowledge, there is space; for understanding, not so much. That is a matter of brain maturation and quite an extension of it. At what level of complexity can matters be understood, for discovery of information. To what extent can a person go beyond the information given and make his own inferences as to what must be the case which had not previously been known to be the case.

That is something you cannot expect, you cannot tell it is going to happen. If it happens, you will be pleased, but you cannot teach it. But you can model the excitement of using that gift, if

you have it.

Now, with regard to diversity, I have so far spoken about universals of the brain. But how about diverse styles? I have mentioned ineffective styles versus effective styles; but how about different styles, equally effective, for different purposes. It is the case, and we know this from previous studies, that there is no one intellect, but there are many intellects. You have heard speak of left tennis beds, right tennis beds, and styles, analytic, synthetic. Of course, there are those but there are many more. Just because there are two halves of the brain doesn't mean there are two halves to the intellect.

There are many, many forms of intelligence. Different parts of the brain do different things. They operate differently in different people.

Then, sometimes, there is a cyclical relationship, sometimes related to one thing, sometimes to another. This is appropriate for a diversified, complex society.

So, the brain teaches us what we want to know, that each of us has in our heads strength, which we flaunt, weaknesses, which we cautiously

conceal. Should we teach the strength or the weakness? Obviously, we should capitalize on the strength and teach survival skills in the area of weakness, so that the person can get by the real barriers, not the artificial barriers that rectify an overburdened school system, but real barriers so that we may move effectively in society and then exercise their skills they actually have because those are needed.

Now, I have indicated my opinion that what the gifted require is not so much extra time to learn extra schooling. If they have role models that impel them to be driven by their own curiosity, they will put in the extra time way beyond what any school teacher could endure. The important thing is to present to them the example of something with a genuine disinterested love of knowledge.

Competitiveness? Not by any means should competitiveness with other children be the spur because, then, all you can ever do is a little bit better than the next person, and how good is that? You have to compete with yourself, and that never ends.

So, with regard to the gifted person, and

by this, I mean the really gifted person, -- not the top 5 per cent, not even the top 1 per cent, but the really gifted person we are talking about -- you don't need teachers with special skills and training and curricula. You need teachers who are inspirational.

And there is one more thing that you need. To be gifted is to be exceptional. To be exceptional is a potential misfortune. To be gifted is to be different. It is maladaptive. You are weird. What interests them does not interest you. You try very hard to pretend to be ordinary. You put on your dark intellectual glasses. You pretend to be dumb. But you cannot get away with it because they realize that you are cheating, that you are really smart.

To be gifted means that you are going to have a much harder time in life.

About 500 years ago, a Chinaman, with whom I am otherwise not acquainted, wrote the following thought. "Familes, when a child is born, hope that he will be intelligent. I, through intelligence, having ruined my own life, can only hope that my son will be stupid and ignorant; whereupon he will conclude a tranquil existence by becoming a cabinet minister." (Laughter.)

Let me appeal to you not to envy the gifted, but to sympathize with them. And let me urge the Commission to consider that they not only leave opportunity, but also support. Thank you. (Applause.)

Commission BAKER. Thank you, Dr. Kinsbourne, for this insightful and elegant assessment of what we can expect from the individual. And that, along with what we face in the societal context that Dr. Gallagher has told us of, leads us to begin to talk about the ways these two can come together and how can the individual possessed of the qualities you note begin to relate to the societal structure that Dr. Gallagher has so adeptly characterized.

On this, Dr. Joseph Renzulli, the Associate Director of the Bureau of Education Research at the University of Connecticut, has agreed to speak to us. Dr. Renzulli.

Dr. JOSEPH RENZULLI. Thank you very much. I am pleased to have this opportunity to address the Commission and am delighted with the remarks of both Dr. Kinsbourne and Dr. Gallagher. I think they have pointed out some extremely crucial issues.

I would like to spend -- I am sorry. I see a signal from the back that they -- is this better?

I gave a talk one time and a person put their hand up at the back and said they couldn't hear me. And someone said, "Well, I am in the front, I can hear, and I will be glad to exchange seats with you." So -- (laughter).

I would like to really restrict my remarks to two specific areas, one being the areas of regular curriculum that I think need to be considered in meeting the needs of bright youngsters and, secondly, some of the kinds of program designs that we need to pursue in order to make modifications in the education of more able youth.

I think one of the great tragedies of the egalitarian era of the '60s is that, in some ways, we reduced the amounts of rigor that were ordinarily representative of American education and the result of this has been a decline in SAT scores, all the stories that you folks know.

A report released recently by the Education Products Information Exchange, which is a non-profit consumer educational research organization in New York, I think highlights dramatically some of these kinds of declining scores and the reasons for them.

I would like to quote to you from a brief report on a study of textbook content. "Sixty per cent of the fourth graders in non-disadvantaged schools were able to score over 80 per cent on tests of the content of their math texts before they had used the textbooks for the school year. Similar findings were reported on tests of textbook content with students in fourth and tenth grade science and tenth grade social studies."

I think that this kind of research highlights the fact that there is in the so-called regular curriculum a tremendous amount of lack of challenge. When that many young people know the subject matter of their prescribed courses before they ever set foot in the classroom, I think we realize that a great deal of the time of our highly able youth is being wasted.

A more recent report from Phi Delta Kappa magazine, by Michael Crist, and I quote, 'Meanwhile, with regard to the content and materials, a sample of U. S. textbook publishers agreed that their textbooks had dropped two grade levels in difficulty over the last ten to fifteen years.

"According to the Los Angeles Times, when

California tried to reserve two slots on the statewide adoption list for textbooks that would challenge the top one-third students, no publisher had a book to present. They could only suggest reissuing text books from the late sixties, which are now unacceptable becuase of inaccurate portrayals of women or minorities, or writing new texts, which would involve at least three to five years in development."

I think that, once again, this highlights the problems that brighter youngsters face with regard to regular curricula.

I think that the other point that I would like to make and that a great deal of our work at the University of Connecticut has been focused upon is giving greater attention to a broader conception of giftedness. I was delighted to hear Dr. Kinsbourne say that the top one percent are not necessarily the gifted and talented.

So I would like to report to you very briefly this morning on some research that has been going on at the University of Connecticut that has been entered into the record in the materials that have been submitted to the Commission. Four years ago, with the cooperation of officials of the Connecticut State

Department of Education, we were given permission to expand our conception of giftedness and the number of youngsters served in programs for the gifted and talented from the existing traditional top 5 per cent, as measured by achievement, intelligence, and aptitude tests, to a somewhat broader conception that included the top 15 to 25 per cent in any given school district. These youngsters were provided any and all of the services ordinarily available in gifted programs on a fully equitable basis -- that is to say, that the top 5 per cent did not go around with arm bands on their sleeves and the next 15 per cent were faded. They were indistinguishable as far as the amounts of services that were provided.

Through a variety of research studies, looking at both cognitive and affected growth of these youngsters, we found that there were no major differences in the quality of work that was produced over a given period of time.

I think that this helps to illustrate that there is a larger supply of gifted and talented students out there than we ordinarily seem to be able to serve through existing guidelines and procedures. I am amazed at the people who walk in with a statistic

that says, "We have 1.6 million gifted youngsters" or "The top 2 or 3 or 5 per cent of the population is gifted." I believe that a lot larger percentage of the population is capable of gifted behavior.

Finally, one of the things that I would like to say is that these youngsters exist at all levels of society, and I think we have had, in a sense, programs that serve gifted youngsters in our society, mainly youngsters who have gone to the better schools and had better educational opportunities.

I do believe, though, and as Dr. Kinsbourne pointed out that these youngsters exist in all groups, and I think that we need to create the kinds of vehicles whereby highly-able and highly-potential and highly-capable youngsters in whatever school district they happen to be a student in, whether it be a very prestigious and well-endowed public or private school, or whether it be in a small rural or inner city school, that we create in these kinds of schools the opportunities for highly-able youngsters to have a competitive edge with children who happen, by good fortune and social economic status, to have been enrolled in schools which are more prestigious.

I would like to just simply reinforce

things that Dr. Gallagher said about the kinds of support that the field of gifted and talented needs. We have limped along for many, many years on very small and almost non-existent support, when you look at it in comparison with other areas of education, let alone what is spent in other areas that Dr. Gallagher mentioned. I feel that the monies available, especially for research and development, have almost been non-existent in this field, and I think that we need to have a much more extensive amount of support, if we are going to be able to provide a better education for these youngsters.

Thank you very much. (Applause.)

Commissioner BAKER. Thank you, Dr. Renzulli, for this skillful abstract of the work that you have contributed yourself so much to, and that gives us a further approach to the matter of joining the individual with the societal resources for development.

In that same vein, we now have the pleasure of hearing from Dr. David Feldman, Associate Professor at the Eliot-Pearson Department of Child Study, Tufts University.

Dr. DAVID FELDMAN. Thank you, Mr. Chairman. My colleagues have ably discussed the organizational,

the biological, and the curricula aspects of issues pertaining to gifted and talented children. My own remarks will focus on conceptual reorganization. It is my feeling that, if this noble and well-intentioned exercise is to have any realizable impact, it is going to require major conceptual rethinking of this field as well as the more practical aspects that my colleagues have focused on.

I would like to begin my remarks, Mr. Chairman, with a quote from John Gardner's book, "Excellence", published now more than 20 years ago. It reads: "An excellent plumber is infinitely more admirable than an incompetent philosopher. The society which scorns excellence in plumbing because plumbing is a humble activity and tolerates shoddiness in philosophy because it is an exalted activity will have neither good plumbing nor good philosophy. Neither its pipes nor its theories will hold water.

There are three observations I wish to make about the current state of affairs in the field of gifted/talented education which are inspired by John Gardner's words. These three points will lead in turn to three suggestions for revising current

conceptions of talent and talent development. Finally, I will offer three recommendations for the future. The overall purpose of my remarks is to suggest that the time has come for an overhaul of how we respond to extraordinary capability in our children; this should be done at the practical level, at the conceptual level and at the policy level as well.

Giftedness in America, at least insofar as the notion has manifested itself in public education, is almost synonymous with general academic promise. To be labeled gifted has meant, with few exceptions, to have scored better than about 98% of one's peers on a standardized IQ test. The price of admission for the vast majority of programs was and is set by this standard. Sometimes the tendency to use IQ goes to ridiculous extremes. A year or so ago there was a summer dance program in a town not far from Boston where even the most promising young dancer had to fulfill the criterion set for admission: 130 IQ or above. So my first observation is that giftedness in the American public education system means high IQ. High IQ, in turn, is an indicator of general academic talent, the capability to do well in standard school situations. It is almost as if we had decided

that giftedness was to be defined as strength in philosophy and all our children are ranked in terms of how promising they are in philosophy, even though we actually need (or even want) very few philosophers.

The fact that giftedness tends to be defined in terms of academic talent leads to my second observation: that for a person to be labeled gifted in America is to be given a promissory note about his or her future. It is a prediction that a given child will grow up and do something significant or worthwhile. At the time the label is conferred, however, the child has done nothing significant except to do well on the test itself. Although it would be encouraging if the promissory note indeed predicted accurately who would and who would not make positive contributions to society, it is clear from the famous Terman study in California and from others that IQ is only a crude predictor of future success. And it predicts success not at all in many fields like art and leadership.

If one were to ask the question based on IQ: "What does a gifted child do when he or she grows up?" the answer would have to be similar to where a six hundred pound gorilla sleeps: Anything he

wants to. Giftedness in American tends to mean a child can aspire to do anything once the IQ threshold has been exceeded, but IQ itself tells very little about what that choice might be. And it tells us even less about how to help make a choice into real performance.

My third point is that a consequence of the tendency to sort out the populace into gifted and not gifted groups has been to create pernicious status divisions among our children. John Gardner argued in Excellence that status differences are a natural consequence of different levels of performance. It is therefore not status per se that is the problem; it is arbitrary status that is objectionable and that we rightly call "elitist." For Gardner, the critical point is that status should be earned through sustained excellent performance. It is not at all surprising that people resent the label "gifted" being conferred on the basis of performing well once on a test.

I should stress at this point that my remarks are not to be construed as critical of the need for programs for students who are academically talented and who would profit from greater challenge in the classroom. I am simply arguing that exclusive

emphasis on this form of talent development is problematic on three counts: One, it tends to limit talent to general academic potential; Two, general academic promise is only modestly predictive of real world excellence; and Three, giftedness as IQ tends to confer status prior to one's having genuinely earned it.

It may be that if we were forced to choose a single criterion for giftedness, IQ would not be a bad choice. From my studies of child prodigies, however, persistence would probably work just as well. But there is nothing whatsoever (other than perhaps inertia) to make us use a single predictor. As things stand, the emphasis on general academic talent in selection for programs for gifted students institutionalizes and helps ensure that only those students who demonstrate such capability are officially encouraged to develop their full potential. Fortunately, the effort is not always successful.

Suppose we were to consider general academic talent as one among a variety of potentially valuable gifts. In principle, this is what the most recent federal regulations on identifying giftedness have proposed. In addition to academic promise,

there are references to specific talents, creativity, leadership and physical ability. As a practical matter, however, this expanded definition of giftedness is more promise than practice. In practice, criteria other than IQ are usually considered only when IQ data are ambiguous or marginal. In other words, high test performance is necessary, but if a student scores slightly below the IQ cut-off for admission to a program, performance on another criterion may be considered. This leaves us substantially where we started.

In a small study I did in Minnesota several years ago, I showed that criteria for admission to gifted programs are almost always ambiguous and arbitrary. The study showed that almost every child in a typical classroom might be selected for a hypothetical special program, based only on criteria that are now commonly used in school systems around the country. In other words, there is as much evidence to suggest that 98% of the population is "gifted" according to one or more of the usual selection criteria as there is evidence to suggest 2% are gifted. In this kind of situation, it seems advisable to suspend judgment about the nature and

extent of giftedness in our population until clearer notions of just what is meant are forthcoming.

My first alternative suggestion, then, is that we begin to think of giftedness on a more specific basis. General academic potential is certainly valuable and should be encouraged, but it would be unwise to bet the future of the country on identifying and supporting only those who pass muster on an IQ test. Indeed the so-called creativity test movement was begun in the 1950's because IQ had proven to be inadequate in predicting innovative thinking or leadership during the Second World War. Unfortunately, we are still virtually no better off today than in 1950 in identifying and encouraging specific talent. Serious conceptual work on the nature of specific giftedness is, I believe, requisite to changes in policy and practice, and this work has not been done. I would suggest, however, that in numerous fields in the society talent is in fact identified, developed and rewarded in very sophisticated ways. In high technology, professional sports, the media, surgery, and pilot training it is unlikely that individuals who are not gifted achieve top positions, or, at least, we had better hope not. We may have been

looking in the wrong place for information about how to identify and develop talent.

A related point is that giftedness could well be conceived as performance at an impressive level in a given field rather than as a general prediction about broad gauged academic achievement. Lewis Terman in 1920 believed that high IQ was a prerequisite to distinguished achievement in virtually any field, but this has turned out not to be true. The best predictor of future achievement is present achievement. And the more specific the achievement the better. If one wants to predict who will be a ballet dancer, a physicist, a mechanic, or a teacher, the best evidence is performance in these domains or in domains closely related to them. Although few young children have selected the domain they will ultimately pursue as adults, certain distinctive patterns of childe behavior may be related to certain adult domains. This has certainly been the case in my studies of child prodigies.

It makes sense, then, to think about identification of gifted children by observing their performance within the specific domains in which children are working or in domains where the connection

to adult performance is clearly demonstrated. The considered reflections of master practitioners in a field are most likely to unearth the key variable. I am suggesting that our way of looking at giftedness would be improved if performance within a specific domain were emphasized. The word "genius", after all, originally referred to a person's unique, special qualities or gifts as they were manifested in actual performance. We would do well to recapture some of that meaning in our current view of giftedness.

It should be clear that the two alternative changes in our view of giftedness I have just proposed would help reduce the elitism inherent in current policy and practice. If giftedness were seen as the use of one or a combination of several talents, it would help prevent the simple dichotomy created by general academic promise or the lack of it. One could reveal promise in a specific realm without, or in addition to, showing general academic capability. And if actual performance within a specific field were taken as a primary criterion for being labeled gifted, then status would be conferred as a function of demonstrated excellence, an inherently less arbitrary way of doing things. It is also

likely that prediction of future excellence would be more accurate since early promise within a field (such as poetry or sports or politics) is most likely to be related to later achievement. This way of looking at giftedness is nonelitist in the sense that individuals have to earn their status and continue to do so by actual achievement. It is my impression that few people resent genuine excellence and the rewards that it brings.

To summarize, then, my three suggestions for reorienting our thinking about giftedness are (1) that we conceive of talent as taking many specific forms; (2) that the designation gifted be bestowed only based upon actual achievement within valued domains of activity; and finally (3) that status be directly tied to achievement; in other words, the development of human potential be seen as a fundamentally nonelitist endeavor.

It is one thing to redirect our conceptual framework about giftedness. It is another thing to draw from this orientation reasonable implications for fostering excellence through education. In my remaining remarks I will propose for discussion some changes in education that might follow from what I

will label a developmental view of giftedness. The central feature of this view is that talent development is a complex function of how well coordinated the resources are in the child's environment.

It seems to me that it is important to distinguish between two broad goals of public education: basic skills, and what I will call optional skills. Traditionally, giftedness in public education refers to being very good at the former, while I am proposing that giftedness in the future be much more identified with the latter. By optional skills I refer to the many possible worthwhile pursuits that our society offers and/or encourages. These tend to be found-- if they are found at all--scattered through the school curriculum and the school day in the form of electives. More often, they are pursued outside of school. I believe that the basic skills function of public education might profitably be condensed into half the normal school day, while the remainder of the day could be spent in pursuit of optional skills.

The schools themselves may well be inadequate for offering the variety and quality of optional skills necessary to engage the energies of

all students. But if the two functions, basic skills and optional skills, were distinguished, it is perfectly feasible to think of the school as one among several institutions offering opportunities for talent development. Business, industry, agriculture, technology, government, the arts, media, medical facilities, sports teams, universities, research institutes, unions, etc. might become more formally involved in the educational process. Apprenticeships, mentorships, internships, assitantships, and part-time jobs would have the dual advantage of putting youngsters in direct contact with those who work in fields in which excellence may be manifested and at the same time put them in greater touch with the adult generation as well, a not insignificant fringe benefit of such an approach.

My second recommendation is that serious consideration be given to a national effort to replace current measures of general academic promise with more refined, specific diagnostic instruments consistent with the view of talent and excellence reflected in this testimony. Although such tests have had and will continue to have utility for clinical and broad diagnostic purposes, they stand in

the way of reorientating our thinking about excellence. It will take a major research and development effort to produce alternative measures that are as practical and easy to use as the existing ones. Until such an effort is begun it will be extremely difficult, if not impossible, to change current practice and therefore transcend existing assumptions about potential for excellence and how to develop it.

My final recommendation is that a major effort be made to better understand the delicate coordination of the forces, family, peers, siblings, teachers, mentors, technologies, historical conditions, that bring about extraordinary achievement. I have called this coordination co-incidence. Good work has been begun by colleagues like Jeanne Bamberger, Benjamin Bloom, and Mihaly Csikzentmikalyi, Howard Gardner, Howard Gruber and, if I may be so immodest to say so, in my own research with child prodigies. But with a matter as complex as this one, it is surely an understament to say that it will take some of the best efforts of, yes, some of our most gifted researchers, to begin to shed some light on it. The existence of a group such as the National Commission on Excellence in Education is the sort of force that

may help catalyze the research and development effort.

To return, in conclusion, to John Gardner's statement for a moment, we would do well to direct our efforts toward valuing excellence in as many forms and in as many fields as our imaginations and resources will allow. Both our plumbers and our philosophers deserve respect for putting forth their best efforts and rewarded when these efforts lead to excellent performance. Our job is to learn how to help those who would be excellent plumbers do so, and encourage those who would be mediocre philosophers to direct their energies elsewhere. Then both our drains and our ideas will withstand the pressures that are sure to strain them in the years to come. Thank you. (Applause.)

Commissioner BAKER. Thank you, Professor Feldman, for your keen analysis and stimulus about what to do with these matters.

I thank the speakers, also, for their observance of time. They have achieved an elegant balance, indeed, between what is said and what is known.

We shall proceed with the discussion presently, but I would like to take a moment to speak

on behalf of the Commission about the ways we have been able to get into the matters which you have just heard being discussed with such skill this morning, and that is through staff support from Washington of extraordinary merit.

We are, after all, making reports to the American people, to our national community, which is so warmly represented here this morning and, therefore, welcome a chance to point out that our Executive Director, Dr. Milton Goldberg, his associates on this particular occasion, Ms. Mollie McAdams, Peter Gerber, Mrs. Tynan, Mr. Tomlinson, and Clifford Edelman, have simply been the key resources for us to find the insights and knowledge which we are so appreciating now.

Similarly, we want to report, as an independent commission of the Secretary of the Government, about the very high help we have had from the Department of Education, in many forms, and I would hope that Mr. Wayne Roberts, who is the regional representative of Secretary Bell in this area, might be with us and willing to comment on the activities related to these studies in this region. Is Mr. Roberts here?

(No response.)

Commissioner BAKER. If not, I know that he would have said the things that would have helped us in this respect.

I am also happy to note that Professor Gerald Holton, Commissioner Holton of the National Commission, has joined us. He is also one of our hosts as Professor of Physics at Harvard.

We now take pleasure in moving to the discussion in which the Commissioners will work with the speakers, and they are invited to cross-connect and cross-talk in any way they wish. The hope would be, however, that the sound will be respected and will penetrate to the far reaches of the chamber. This matter of getting to the far reaches of the chamber has been dealt with in various ways, as Dr. Renzulli reminded us.

At one time, George Kaufman, was observing the inauguration of one of his plays, including an actor who was a bit unable to do the things that the playwright had expected and, after the first act or so, Kaufman sent a note from the rear of the theatre to the actor, saying, "I am here in the rear of the theatre. Wish you were here." (Laughter.)

I invite any member to perhaps to begin our discussion.

Commissioner MARSTON. I have two questions that I would like to ask. The first question I would like to ask is to Dr. Kinsbourne, if I may, please. Dr. Kinsbourne, would you be so kind as to elaborate on your statement that a type of teacher is needed to teach the gifted?

Dr. KINSBOURNE. The point that I was briefly alluding to is that, in order to give a really talented person -- and I insist on the really talented beyond those percents that have been mentioned -- the drive to put in the effort, the severe effort, aptitude to realize the potential, genius being 90 per cent perspiration, as you know, that person has to see it being done by someone else whom he respects, and see it done well and effectively, and take fire.

Now, what I want to emphasize is that being gifted, being talented, as a state is nothing. Actually, acting it out, as someone said, is immensely fatiguing, and occupies time exclusive of all sorts of fun. The poet Yeats complained bitterly about the fact that trying to do what is difficult has pretty much rotted his bones. He couldn't do another

damn thing because he was so focused on doing that which was difficult, which he did successfully, as you know.

So, the point that I want to make is that the very gifted individual, once he has that impetus, will go to his mind, will go to the books, will go to the library, will, in fact, work, even on matters totally unconnected with what that excellent teacher taught him. It doesn't matter what the field is in which the teacher is. It is the example of a good mind functioning that is important.

Nor does it have to be every teacher; one may be enough to show how it can be done. And, when I was teaching at Oxford, I saw this time and again, a person coming with a tremendous mind, but not knowing what to do with it, and finding one teacher, not always the same one, to lock into and suddenly take wing.

So, what is important, then, is to find a person who is inspirational and, also, one who is in a sufficient individual relationship to be a proper role model, not addressing a class of five hundred.

And, again, I point you towards the Oxford

tutorial system, and that is the merit of it, that, one hour a week, you get to sit with what ought to be and occasionally is a person with an excellent mind.

Now, this is just an example. There are other ways of doing it, but some individual contact with somebody terrific is what I was recommending, and the rest is routine.

Commissioner MARSTON. Thank you very much. Dr. Renzulli, you spoke accurately, I am afraid, about the status of our textbooks in this country. I wondered if you could perhaps enlighten us on some possible solutions to the improvement of textbooks.

Dr. RENZULLI. I am not sure if I can enlighten you on some solutions to improvement of textbooks, except that I think we need to have a re-analysis of existing textbooks, with the best minds in any given field brought to bear upon those.

I do believe, however, that we need to make some modifications for highly-able youth in the ways in which we use textbooks. In the programming model that we have developed and used in Connecticut, among other places, we have introduced a procedure which we call curriculum compacting. Curriculum

compacting is a procedure whereby we don't necessarily speed up the curriculum in an accelerated fashion simply by covering the same material at a faster rate, although some of that is involved. But curriculum compacting implies that we eliminate, through some systematic and very easy-to-use procedures, those kinds of materials that a youngster already knows and need not spend time on.

Curriculum compacting is part of an overall programming model which then, first of all, relieves the boredom of dull, repetitious and unnecessary involvement, but secondly, and I think more importantly, and dealing with the third stage, the discovery stage that Dr. Kinsbourne referred to, it opens the door and buys the time for a wide variety of different types of enrichment experiences for the types of involvement with, perhaps, a highly-trained or specialized teacher or person of like-minded interest or ability from the community who might serve as a mentor or guide to a particular youngster.

Commissioner MARSTON. If the States of California and Texas were the ones that adopted such a particular philosophy, then we would have them, perhaps, across the country.

Dr. RENZULLI. Could be. We are trying to sell it as hard as we can.

Commissioner CAMPBELL. May I ask Dr. Gallagher a couple of things. First of all, you suggested a change in the infrastructure, and I would be interested in that. Secondly, how are the students chosen for the North Carolina School for Science and Mathematics?

Dr. GALLAGHER. All right.

Commissioner BAKER. Is the microphone working all right there?

(Cries of "No!")

Dr. GALLAGHER. Well, the change in the infrastructure, she asked, what can you do to change the structure in a way that can be more effective for gifted education? I would think that one of the things -- I would echo what Dave Feldman said, and that is the need for specific research and development funds to develop better instrumentation, better identification tools. If you were trying to repair something in your house, you have two choices. You either go to your toolbox and use the tools that you have got, or you go out and buy some new ones.

What Dave Feldman is suggesting and I am

suggesting is that we need to go out and buy some new ones. Failure to do that means that the schools will use the tools that are in the toolbox now; they haven't got any choice.

In the State of North Carolina, in terms of the regular program for gifted education in the elementary schools, they use a four-dimensional kind of thing. They use the IQ test, but they also use teacher ratings. They also use that sustained excellence that Dave Feldman was talking about, evidence of sustained excellence, as part of the entry ticket to get into the program in the first place.

But the tools are not there, and we all recognize that. It takes money to develop these tools and the money just hasn't been available.

In terms of the North Carolina School of Science and Mathematics, again, we ask for recommendations from the school systems. A student or a parent can recommend their own child. When they do that, they take aptitude tests in science and mathematics, standard aptitude tests. They get recommendations from their school. They write an essay of their own as to why they want to do this, which

sometimes has quite an effect upon the staff that is reviewing these, and they get as much other information from the school system on their past record as they can.

They then try to balance these out with obvious needs in geography, sex, race, that sort of thing, in order to get a balance.

What they end up with is an extraordinary crew of youngsters who have the kind of thing that Marcel Kinsbourne was talking about. In other words, these are model teachers; they do research; they don't just teach. And so they stimulate the youngsters in a way that you have to kick them out of the laboratory in the evening in order to close down the offices.

So the purpose of the school is worth some attention because it is not just to educate three or four hundred bright youngsters. It is to demonstrate what excellence can do and to demonstrate to the other school systems in the state to provide a training base for the training of teachers to work with gifted and talented students throughout the state and to provide a kind of a lighthouse for new techniques and new procedures that can be used and picked

up by the rest of the school system.

So it is not just an isolated program designed to help a small number of children. It is designed to have a major impact on the entire school system in the State of North Carolina.

Commissioner HOLTON. First, I would like to apologize; I came late from a plane from another conference.

Second, what I heard here immediately triggers a number of resonances. One learns from historically great minds and doers that they need many of the things that you have been talking about, fellowship, freedom, elbow room to do the things that they want in a surrounding which tolerates it, at least, the kind of support from parents, textbooks that are properly written, and all the rest.

But what I think I had better ask about here, instead of following my own personal interests, to point out that we are national, we are national. We do want to make recommendations that are useful at the local level, at the state level, but, also, at the federal level. And, from the material I read and what I have heard, it isn't quite clear to me -- and, therefore, I would like to be enlightened -- to

what degree the solutions that you see, each in your own way, in fact, may involve a Federal presence, as against a local or a state presence.

For example, if I can readily think, the teacher training must be at a level that may be beyond the capabilities merely of the locality or the states, or subsidy of texts which they don't sell in the 20 thousands or 50 thousands a year because they are no longer being taken seriously by most publishers, or money for experimentation and research, which has just been mentioned a few minutes ago, but I didn't see that in the literature; or Federal fellowships for the gifted, or perhaps for their surroundings, to make it possible, perhaps, to handle the gifted, when they do turn up.

There are a variety of ideas. I don't just ask you to do it off the top of your head. The record stays open for a month, I understand, so your specific recommendations would be very helpful in that area.

Dr. GALLAGHER. I did try to provide that in my statement, Professor Holton, but I think you came after I gave it.

Let me review them for you, because I do

believe that that is the important question here. And that is, what can the Federal Government do? And I think the answer is that it can be catalytic in nature, and that catalytic provides small amounts of funds for very crucial kinds of things.

Research and development. That is clearly a Federal role. That is true in all fields of education, as well as health and other dimensions. The Federal Government has always taken the role of being the leader in research and development activities -- the reason for that being that the states do not invest in that. They invest primarily in service kinds of activities at the state and local level.

A second is leadership training. Many states are resistant to doing advanced training of persons or post-doctoral kinds of work on the grounds that they may, in fact, see greener fields somewhere else. They may get educated in North Carolina and go to California, get educated in Colorado and go to Florida, and all that money was wasted that the state spent on that person, from the standpoint of the State Legislature.

So advanced graduate training money can come from the Federal level.

Demonstration money. That can be given to the states, but it provides for states with those extra kinds of funds that they don't have easily available within their own Department of Public Construction, but can provide a kind of lighthouse or example of excellence that otherwise would not be there.

The particular area of dissemination, of actually providing some vehicles by which good practices get delivered from one place to another. One of the problems we have always had in education is, how do you deliver a great program from Portland, Oregon, to Tampa, Florida, or from Lubbock, Texas, to Vermont, and we do have better knowledge now, on how that is done, and that is kind of a technical assistance program that, in fact, could be provided and will not be done unless it is done from the Federal level because it cuts across communities, it cuts across states.

I think supporting these kinds of things at a minimal financial level can provide a catalytic effort that can energize a lot of the resources at the local and the state levels, and unless the Federal Government does it, it isn't going to be done.

Dr. KINSBOURNE. I think Dr. Gallagher's remarks can be summarized in terms of a simple distinction. Fostering the development of an individual, gifted child is the province of the state within which he or she lives. Developing information about how the human mind and human brain achieve sophistication of the type that can be generalized across the nation is a Federal responsibility.

Chairman GARDNER. I should appreciate very much reconciliation of two of the testimonies here this morning, to the extent that you are disposed to do so.

Professor Gallagher has suggested that there is a pressing need for both more support, an enhanced infrastructure, and a greater attention to be paid on all levels of government in their appropriate spheres of responsibility to this problem.

Now, Professor Feldman has suggested that what we really need, not excluding the former, is a reconceptualization of the idea of who constitutes gifted intelligent young people.

How are we, on the one hand, to encourage a greater measure of support and, on the other hand,

represent that we need, in fact, to reconceptualize the basis of the effort?

Dr. FELDMAN. Very carefully.

Chairman GARDNER. Now, this Commission is expected to offer some recommendations in this respect, and I think we need to discover a means of effectively doing so in way that do not assume that your testimonies are mutually exclusive, and I would appreciate your helping us with that.

Dr. GALLAGHER. Well, I would say that they are not mutually exclusive. I welcome the opportunity to try and demonstrate how.

We must, in fact, get better tools; we must, in fact, get better methods; we must do better jobs at developing more effective curriculum in this area. That doesn't mean to say that we abandon efforts we have already done. It means we must be about the business of trying to improve on those.

And Dr. Feldman is suggesting, in my view, some of the vehicles by which you can, in fact, improve them. But in terms of one of the things that he said, for example, that you pick on the basis of sustained excellence instead of just IQ tests, or that you include the leadership and creativity and arts and

humanities as part of your definition, in our national survey of the programs, we find that forty states, in fact, include those definitions in their definition of gifted children in their states right now. They say that it is not only those who have academic ability and intellectual performance, but those who are excellent in leadership and creativity and the arts and humanities.

Now, stating that in the abstract and the definition is one thing. Operationalizing it in the schools is quite something else again. And what we don't have is the tools and the procedures and the methods by which we can translate an objective into an operational fact. To do that, we need these kinds of catalytic funds that will allow us to build the instruments and develop the new curriculum that has been suggested here, and that is where the Federal Government comes in.

Dr. RENZULLI. May I comment on that very briefly, because I am in agreement with my colleagues on a lot of this, but in some small amount of disagreement in other areas. We don't need more measures. We already have ways of finding out who are our best and most efficient learners and who are our most

creative youngsters.

I think that the reconceptualization that Dr. Feldman talks about is an accurate portrayal, but what we need to do is to develop programming models that allow youngsters to have an opportunity to perform. I think that the great failure of the gifted child movement in this nation has been our treating giftedness like a physical characteristic or a disease, like red hair or blue eyes or a dark complexion, and we have gone about it in this fashion.

If I can measure you as one measures a physical gram or degree or characteristic, then I will serve you. And I think what we need to do is to give -- again, we can easily, -- there is no teacher that has taught for more than a month a group of children that doesn't know who are his or her most able youngsters and, with the existing kinds of tests that we have in intelligence, aptitude, achievement, creativity, and things like that, we can pick out those youngsters who seem to have the greatest potential for higher levels of performance. But, beyond that initial, first level kind of screen, I think that, after that, we must look at their performance. By their deeds, ye shall know them, by

the kinds of things that they do. I see another effort into the measurement and instrument area as simply coming up with another pre-selection criteria. We need to give people an opportunity to perform and make determinations based on that.

Dr. FELDMAN. If your purpose, Mr. Gardner, was to raise a little controversy, I guess you have probably succeeded. I do disagree with my colleague, Joe Renzulli, about this particular issue, but, in fact, I think it is more of a semantic than a substantive disagreement.

What we think about when we are thinking about measurement is what we already know and, based upon what we already know, I would actually probably agree with what he says.

But what I think is imaginable is a conception of measurement, if you will, or assessment which is so linked and so much part of the curriculum and program effort that, in fact, to an outside observer, one would not be able to distinguish one from the other.

The purpose, really, would be to widen the horizons of those who are watching the children, and I think, with all due respect to the good work

that Joe and his colleagues have done, an expansion of what is in the minds of those who are looking will lead to a detection of more kinds of things out there, and it is really towards that kind of end that I think the effort is aimed.

Dr. GALLAGHER. Could I just make one final comment on that. I have to disagree on one small point with Joe Renzulli, and that is that the teachers know who the bright students are in their class. And the evidence is very clear on this, and that is, yes, most of them, they do know, particularly if they perform. The problem is if you have a great deal of talent and you don't perform; then, do they know? And the answer is, "No, they don't."

And so, there is an additional research problem here about youngsters who seem to have abilities that are latent or that they have not had the opportunity to develop.

Now, when one talks about instrumentation, you don't have to talk about a paper and pencil test that you have to write or fill out. You can talk about a teaching situation, a vestibule type of situation in which you try out the youngsters under various circumstances. That is an instrument, too.

And so, what you have to do is broaden your conceptualization of what you mean by "instrument". But, of course, the opportunity to do it is one of the better ways of trying to judge, but we have lots of inner city kids. The best way of judging a clarinet player is to say, "Pick up a clarinet and play something," but that works only if you have been playing on the clarinet for awhile. If you have never had the chance to play a clarinet, then that doesn't work very well.

And so, you have got to develop the kind of opportunities for youngsters that really haven't had a shot at developing their abilities, as well as picking up those youngsters that, through a combination of good opportunity and family background, have, in fact, found it.

Dr. RENZULLI. Mr. Chairman, may I say a few words in defense of Joe Renzulli. I came here today with the specific objective of not to sell any particular approach or programming model and, as both Dave and Jim know, we, in fact, use an instrument which is not a structured instrument in this level of identification. We call it an Action Information Message wherein it basically is a reflection of the observations/youngsters of in a particular performance

situation.

But, as long as I cannot avoid my own work, let me just spend a moment or two to say that, in an overall, comprehensive, systematic programming model, you naturally provide these opportunities for youngsters to engage in different levels of activity that then become the insights into which youngsters might go on to more advanced kinds of enrichment.

In the programming model which I have developed, entitled the Enrichment Triad Model, -- again, I did not come here today to sell a particular approach -- we have purposefully built in two types of enrichment, one of which is designed to expose youngsters to a wider variety of experiences that they ordinarily would not become involved in or exposed to in the regular school curriculum, which I think all of us can agree is a very limiting kind of experience.

The second type of general enrichment that we provide to a wider band of youngsters -- again, Types I and II are general levels of introductory enrichment -- is designed to give youngsters experience in creative thinking skills, in critical thinking skills, in research skills, and things that

are related to broader use of knowledge, reference material, visual, oral, and written communication activities. It is from these, let us call them, tryouts, that we start to see certain kinds of highly-intensive interests and abilities emerging and it is through this process that we advance youngsters to our highest level of enrichment, what we call individual and small group investigations of real problems.

And that is a very brief overview of a model I provided you some information about in the packet.

Dr. KINSBOURNE. It is clearly possible to conceive of far more appropriate measures of talent than we have at the moment. I would agree that more of the same is of no use. We have lots of instruments.

I would like to state something very briefly with respect to the level of the brain. What is involved in solving a problem? Obviously, you cannot give the obvious solution because, if the obvious solution were correct, it would not be a problem. Therefore, it might be the one next obvious, or the one a bit less obvious than that, or the one even rather improbable. But, if you are a genius, you

may give a solution which is, in fact, impossible, but happens to be correct.

How can the human brain do that? The necessary condition for making an improbable response is to be able to inhibit making the probable one. That is the mental work. It is not doing the thing that is wrong that permits you effortlessly to do what is right.

Now, inhibition is the fabric of mental life. It shapes mental life. It is the ability to restrain the over-learned response, the biologically pre-programmed response, which is usually right, but this time not; preserve it for usual use, but do not use it this time.

Now, at the level of the brain, there are inhibitory processes which make that possible. When I was speaking about numbers of neurons and synapses, it is enough to say that we couldn't potentially measure the level of the brain, how this is done. This is not a sufficient data base.

Now, at some point, ideally, one would be able to listen in to the inhibitory processes as they occur. Obviously, we cannot do this today, but, for instance, one can envisage how, with methods now

developed of radioactive tracking of metabolic processes in the brain, one could look, for example, at activation of certain parts of the brain in response to a certain cognitive challenge, to see how intense it is and how focal it is, how selective it is to the right part of the brain; and that gets us closer to the kind of measure that we might develop with future research, with lots of future research, federally-funded, ultimately to get a better look at this.

So I think that this compliments and does not disagree with anything that has been said.

Commissioner BAKER. Thank you. Our panelists are leading us right to the frontier that we would have dreamed and hoped would happen, because we believe that they are saying, as Dr. Kinsbourne has just pointed out so excitingly, that there may be ways of ascertaining talent which are less environmentally dependent, which are less caught in the present machinery, than anything yet seen.

We would be anxious to hear any further comments that Professor Feldman might have in respect to whether he thinks the revolving door model of Dr. Renzulli on the one hand and the question of what

are the intrinsic resources of the mind on the other can be brought into cooperation in these new criteria that he is thinking about. How near is one to doing something about this?

Dr. FELDMAN. Revolving door criteria and the capacities of the brain? It is a little much, I think, for me to comment on.

This is not really a direct response to your question, Mr. Baker, but I think that there is a high level of agreement across the four people who have come here today, who probably disagree on most things most of the time under other conditions, that we are probably close to doing some worthwhile things and a long way away from doing everything that we would like to do.

I think that it is clear that the common thread is to broaden, to diversify, to look for more variety in the forms that giftedness takes, on the one hand, and the variety and forms of response that society and education make, and I think that is the main point that Joe Renzulli makes, on the other.

Programmatically, there is no question that his work is the most advanced that we have on a large scale basis and so, by its very nature, it

becomes a focal point. I think we should encourage many such efforts.

Commissioner HOLTON. Let me ask you to reject my question, if it is either too foolish or too difficult; but there is this persistent myth that a little social Darwinism, or perhaps a lot of it, is very good for the gifted, because that will be the filter through which real talent will assert itself. And, it is a real question, in looking back on the historic evidence, whether one can discern a yes or no to this sort of question. One looks at the Kepplers, who somehow persisted, despite superhuman obstacles, and, as Keppler put it in his own horoscope, "I prefer by my nature to look for stones rather than bread."

When one looks at the Hungarians that made such a contribution to the sciences, who all were rejects in their own country and came through because they found each other and a subject in which they could assert their individuality, one wonders what, in a more pampered surrounding, they might have been like.

But all that cannot be quite right because we only see the successes, and not the failures and,

as a physicist, I like to have ratios, rather than absolute measures.

Can you give me some kind of a hint to what degree adversity really is helpful or, on the whole, more harmful to the yield of the gifted to society?

Dr. KINSBOURNE. It has been said, I forget by whom, that there is a reason why the French have so many good novelists and poets, whereas the English have rather fewer great novelists and poets. The reason is that being a novelist or a poet is respected in France, and not respected in England. So, to make it through in England, it is like sword steel tempered in fire. That is an expression of the myth to which you allude, which may or may not be correct.

Presumably, rigor is essential to sharpen a good into a great accomplishment; but the rigor should be at that point. In other words, if you don't let them even be good, you are going to have those great and glorious Miltons who never were born and we don't know that they ever existed.

But the rigor should occur at the level of being good already, and that should be not

satisfactory, just to be good.

Now, for something more specific, Dr. Feldman.

Dr. FELDMAN. Just two comments. One is that it may well be true that adversity does, in some instances, lead to excellence or outstanding achievement, but I guess that I don't think anyone would disagree with the observation that the world is sufficiently treacherous and it is likely that there would be sufficient adversity, in spite of if not because of anything we might choose to do. So, I don't think that is really our business. I think that that part of it will probably take care of itself.

Our job is to try to provide positive conditions under which talent can be developed and expressed.

The second point, and this comes from the work with prodigies, is that the conditions that enter into the development of extraordinary achievement are so complex and so numerous that, to single out any one of them, including this one which, I would intuitively agree, is probably important, fails to consider the variety of influences.

Furthermore, as in all of nature, the variety is so great, where just the thing for a certain person at a certain critical point in his or her career may be that kind of adverse situation, at the wrong time, in the wrong place, under the wrong conditions, it could be a disaster. And I guess, again, I think there is wide agreement that those are things we should know more about.

Dr. GALLAGHER. Let me just say that there has been what has been called a cannonball theory, namely, once the sperm and the egg meet, that there is nothing that anybody can do to stop the development and emergence of the talent. I don't think the evidence is in favor of that particular position.

There are a lot of people, even in the worst plague that one can design, there are people who come through it and who emerge unscathed, although that is not a good argument for plagues.

But what we really want to do is to create that kind of an environment.

And, even in a repressive society, one can still get the combination of forces that Dr. Kinsbourne and Dr. Feldman have talked about that can bring forth individuals who can still benefit from

their own individual circumstance, and that probably is what has happened in those circumstances you describe.

Commissioner HOLTON. Just to be on the record, I was not hoping for a plague, but I was hoping for a hint as to how much it might be worth to find immunization and, evidently, you agree that it would be all to the good to have as much immunization as possible.

Commissioner BAKER. Thank you, sir, and thanks to the panel for the admirable discussion which we appreciate very keenly.

We shall now adjourn for a break.

(Short recess.)

Education Programming for the Gifted

Commissioner BAKER. Let's resume this session which has led us so carefully into the area which the academician wishes us to understand and thus, following the pattern so well set earlier, we move now to the section on Education Programming for the Gifted, which involves facing up to what can be done from the principles which were discussed earlier. We begin this section with a report from one of the most

productive and effective studies and sponsorships of the progress of the academically talented youth. Dr. William Durden is Director of the Center for the Advancement of Academically Talented Youth at the JohnsHopkins University.

We must remind ourselves again that we don't want to lose words and that, therefore, they must be delivered very, very explicitly into these microphones.

Dr. WILLIAM DURDEN. No discussion of programs for gifted and talented should proceed without an opportunity to hear from those students who have benefited from such initiatives. Their comments, ringing with the honesty of educational discovery and maturation give a special clarity and focus to our deliberations.

In my own profession, I frequently have the opportunity to receive directly from students their thoughts, reflections, and aspirations about programs designed to develop exceptional talent. Permit me to share with you what has already been shared with me:

From a 13-year-old girl who participated in the 1982 JohnsHopkins Summer Residential Program

in Carlisle, Pennsylvania where aporoximately 700 highly-talented junior high school students from 30 states, the District of Columbia, Australia, and Puerto Rico came together to pursue a rigourous academic and extra-curricular program:

> I've grown here. Here, in this place I have grown bigger and better and brighter. Whereas before I sometimes felt lost and befuddled, now I feel calmer and more familiar. Whereas before I felt out of place, now I feel at home. Here I have seen myself in a different, brighter light. Here I have realized many new things; seen possibilities unfold and the realization of dreams. And now, it's part of me. An unshakeable new part of me, and I'm glad to say that not even leaving can shake it.
>
> One night not so long ago, I was at Math Study Hall with some friends. Suddenly I found that I was not surrounded by grownups; that my math teacher had skipped 4 grades and was going to be a college senior at 17; that her friend had gone to college at 12 and now at 16 was doing graduate work at Cal Tech;

that Rodney, my math T.A., was 16, and Sarah and Sandra were both 15, when I had thought all of these people were in their early 20s! And for a long time I would just look at one of them and say, "Oh, my God, they're real people!"

I couldn't understand later why I kept repeating that phrase, so I went and talked it out with myself outside. It seems I felt that grown-ups were somehow a different kind of people -- they had their own thoughts and feelings . . . they were older and more distant. Now, my thoughts had been turned completely upside down; the people I thought grown-up were only a few years older than myself.

For a long time I puzzled this out and finally came to this conclusion -- that age is relative -- it's what you make of it, no more, no less; it really doesn't matter. And discovering these people's ages didn't make them someone else, or less of the person whom I had known.

And the incredible thing was that, when I came back in from outside to try and explain

what I had learned, I was understood, and I found that all these people, my teachers and my classmates, had gone through similar realizations that had opened new doors.

When we were walking back to the dorms and I was further explaining what I felt about age, Chi-Bin asked, "How old are you?" "I'm me," I answered. "I've never been able to pin myself down to an age. I'm me, I'm growing, I'm learning. I want to learn!" "There's a time for that," Chi-Bin replied "It's called adolescence!"

And from a young student in an Atlanta Public High School for the Performing Arts recently cited by the Rockefeller Brothers Fund for excellence in art education:

In this school you're active in everything. The teachers want something out of you. Mr. Densmore (the principal), I think he's a good teacher, but he gets on some students all the time. Still, I like him. I like that kind of discipline. He helps us get it straight. I never had a teacher like that before. He works us to death. This school is

very different from the regular high school . . . I'm really a jazz musician. I like to think of myself as a professional now. If I had not been here, I would have been totally jazz. They forced me to the classical. I like that now. It feels good.

I want to be the best. This school is giving me the edge. Jazz and classical . . . two different languages, two different interpretations. I need to know them both. Mr. Densmore is helping me . . . And you know, I've also learned from Mr. Densmore how to treat people, how to act. Playing is just not enought to make it. You have to learn how to talk with everyone. There are techniques to learn here, too. You got to do more than what is expected of you. Look at Mr. Densmore. This school is more than anyone expects . . . You have to get sophistication, to learn how to deal with people to get what you want. You know, Mr. Densmore, he knows how to deal with people. I respect him for that. I know he stays busy. Every minute his phone is ringing. Man, he's movin'. I'm proud to be

here. You know, here there is something demanded of us, the whole faculty, Mr. Densmore, the other kids, they all believe we are going to succeed or, at least, come close. We are different. Yeah, I'm damn proud to be here.

And finally, from a 12 year old student reacting to a Saturday program especially designed for the academically gifted, we hear,

> After a quick breakfast last Saturday, I took off with my mother in the family's station wagon and learned more in two hours than I had all week at school. Never was a learning experience so rewarding, yet so intense.

These comments, though few in number, are representative of the reactions students have to participation in substantive programs, public, private, in-school and out-of-school, for the gifted and talented. And when we listen closely to what students are saying, a natural agenda is given to our deliberations. The students appreciate their education because of several key factors:

High standards are demanded of them. Their thought is being disciplined. They are finally "getting it straight" according to one young student.

It is perhaps significant to consider the words of T. S. Eliot here in the essay, Tradition and Individual Talent. "Tradition is a matter of much wider significance. It cannot be inherited, and, if you want it, you must obtain it by great labor.

And yet, this discipline and hard work is comfortably associated for these students with humor and good will. Broken is the stereotype that the mind and its regulation is a lifeless, passionateless activity. They are surrounded by mentors who believe in them and without arrogance give them the confidence needed for success and self-discovery

For the mentors, the communication of their subjects is a passion, an absolutely consuming passion. They usually are blissfully exhausted. They often are outrageous.

In another context, Franklin Thomas, President of the Ford Foundation, provides a more personal description of the above two points. Speaking of his own upbringing in Bedford-Stuyvesant, he says:

"I grew up in a family that just assumed that one, you were smart and capable; two,

that you were going to work hard and, three, the combination of these two meant that anything was possible."

A third comment. The "lock-step" of the kindergarten-college program is not applied to these students as they proceed according to their own aptitudes and rate of learning. Commonsense would tell us -- and we are very proud, of course, of commonsense in our American society; but commonsense would tell us that one of the few generalizations in education that is universally agreed upon is that people learn at different rates and possess differing attitudes. It seems strange, then, that education systems supposedly dedicated to providing the best education for all students are so structured that they block those differences.

There is often reference to American tradition in education, the tradition of the "lock-step". And, of course, as we know from a little research, American tradition in education is anything but the "lock-step". It is proceeding according to your own aptitudes and rate.

And, finally, there is a sense here, conveyed by the students, that there is a limitation

to the abilities and the perfectability of schools as institutions in providing for our students to include the gifted students. Now, this could be quite a provocative idea.

But it is a fundamental idea which I think, and I believe these students would also testify, must be considered.

The school cannot do it all. That does not diminish its role whatsoever. There are outside organizations, there are universities, there is a compelling need, again, in this case, to break the "lock-step" and to break the institutional myopia.

There is, of course, research which points to the need for more expanded elements in education. Personal witness is perhaps the most compelling. This student, for example, decided at a very early age that Greek, that Homer, should not be read at 8:00 o'clock in the morning. She went to her mother and, with a little urging, she was situated at home to read Homer. She had an independent examination. She could indulge in her activities of having coffee, at an early age, at home, and having group study and, of course, through this program, was not in any way diminished in her intellectual growth.

What these gifted and talented students are eloquently telling us about the virtues of their education must not remain applicable to them alone. To permit this to happen would be scandalous. High standards for each individual, significant and inspiring mentors, and the ability of each student to proceed according to his or her own aptitude and need represent critical factors in any child's education. In discussing today means for achieving excellence inherent in selected programs for the gifted and talented child, we must remember that we are also commenting upon the means to realize the aspirations of all our nation's youth. There is without doubt an overriding urgency to our deliberations. Thank you. (Applause.)

Commissioner BAKER. Thank you, Dr. Durden.

We now have this substantive base to proceed with further reports about how the education plans go for this population.

And it is a privilege to introduce Professor Connie Steele, the Chairperson of the Department of Home and Family Life and Professor of Child Development at the College of Home Economics, Texas Tech University.

Professor CONNIE STEELE. Thank you. Up until now, you might think that young children were non-existent, and that clues to the identification of young children as gifted did not occur. That doesn't mean to say that those of us in the Department of Home and Family Life at Texas Tech think that the efforts that have been made at Johns Hopkins are not ones which we want our children to achieve. As a matter of fact, I will tell you at the close of my remarks, about an eight year old whose father has already called to see what were the possibilities for his entry.

Well, what I wanted to ask you about is, what do you see in the young child that would indicate to you that the results that are boing shown at Johns Hopkins can occur? For example, what about the child who surprised his parents by showing ability to read substantially before the age of three? What about the two year old who can find her way from home to grocery store, which is two blocks away, and back again? And what about the four year old who can explain to you the life cycle and the growing cycle of short-fiber cotton? I life in Lubbock, Texas.

I am describing real children that act

in ways that are clues, if one is an astute observer of child behavior.

We are asking three questions at Texas Tech University in our Child Development Research Center. We are saying, first, why encourage at all recognition of these young children as having talent?

But, let's suppose I can justify that and suggest that it is warranted to look at children as having very specific talent; can we identify that young child so that we know that, later on, those efforts will not be lost, the statements that were made by our first panel, looking at the question of why do we spend dollars at the state and local level and then find out later that it has been of no value in that area?

And, finally, does a pre-school program aid in the development of a pre-school child's precocity?

The Texas Tech program is based upon on one fundamental premise, and that is that parents nurture the first indications of giftedness. And unless they let us know at other levels, that child may not be one of those that we specify as gifted because we won't observe, later on, their precocity.

One of the things that I discuss quite often is the need for our having a research program there. You know, Home and Family Life is traditionally just normal development. So, if we talk about development that is out here in the Bell Curve, looking at the top one or two or fifteen or twenty per cent, whatever you look at, the question is, shouldn't we organize ourselves just for normal development.

But I feel very strongly that the reaction that we have made to parents who called, desperate, has meant something to the lives, not only of those children, but in our public schools, who began as our parent-affiliates and went to our public schools to say, "We must have programs beyond the present level of the Research Center and our kindergarten through twelve children," and it has happened. I think what happens to young children who are gifted and their teachers attend to them, happens to other children who are in the vicinity of their program.

The telephone calls that I mentioned from parents are not those that are prideful. There is a certain amount of pride in saying, "My child can do this, can go to the grocery store, or is reading

before three," but that is not usually the clue to the giftedness of that young child. In fact, if a parent is boastful or brags about it, I question whether or not they really understand what a gifted child, in my view, is.

I want to share with you for just a moment my own experience, because I think it will tell you why I am in the research and study of gifted children.

I had my child -- in fact, I lived in Woburn, Massachusetts, and it is great to get back to the area at this time.

My child was two and a half, and she was drying dishes at the sink, and she said, "Oh, Mom, I want to show you something." She brought me a Reader's Digest and said, "Look at what it says on the front of the Reader's Digest."

And I said, "Sherry, did you dad read you that?"

"Oh, no, Mom; that is what it says."

And I became afraid, and I had every reason to do so.

Later, I lived in a state in the Midwest where, at kindergarten, my child went to the area,

excited by the first day at school. The teacher said to the younger children gathered around the table for reading, "What book shall we read?"

And Sherry quickly said, "Well, let's read the one that says 'The Fish That Got Away'."

And the teacher said, "Oh, Sherry, you have that book at home. How wonderful."

And she said, "No; that is what it says."

The teacher said, "Oh, I see, Sherry. Why don't you read it to us?"

And she did.

And I got a call, an hour and a half after my daughter had matriculated in kindergarten, to say, 'Mrs. Steele, you need to come to pick up Sherry. I will not have her in my class."

We need to think in terms, when dealing with our gifted children, of what their needs are. So, on the first day of school, my child was already thrown out.

Parents are asking very strongly, "What will happen when my child enters school to prevent encounters of this kind? Will the school be able to handle this reading on the fourth-grade level, dealing with alternative answers to questions, being insatiably

curious?" And then, on the other hand, the parents ask, "What if I don't continue to provide my child with this help? Will my child become a dropout," as Phil Donahue so poignantly interviewed gifted parents whose children committed suicide in their teens.

These are not questions that are being asked by Junior High or Senior High parents. These are questions being asked by parents of two-year-olds, and three-year-olds.

Jacob Getzels of the University of Chicago made the comment, "The things that happen to a kid after he learns a language, say between three and six, are much more important than what may happen to him in any other three years of his life."

And Paul Torrance, looking at creativity among Japanese children he tested, said, "I had been almost totally unprepared for what I saw in the 15 pre-schools that I visited in Japan. The physical skills, musical performance, art products, dramatic enactments, and skills of group cooperation were beyond anything I had seen before and beyond what I thought was developmentally possible."

What happens in these pre-school years demands our focus. Can children continue within the

public schools the kinds of behavior that they are ready and do exemplify in the early years?

A number of studies have shown, and it has been reported to the Commission, that gifted children, on the average, do not succeed within the present academic system on their own. They have to have help, and they deserve it.

Now, what kind of help can we give these pre-school parents?

First and foremost of all, the influence of the family and the home environment is, without a doubt, the single most important quality in the young child's life, and Dr. Durden alluded to that as well, even for his precocious late adolescent students. Therefore, the parent's education early. I said to Pete Gerber that I thought probably not until you begin preconception and, if not then, in utero, and he said that he thought that was a bit far out, and I almost promised not to mention it, but I thought I would.

Special problems attempting to deal with the young child and identify that young child, at Texas Tech, but, also, at the University of Washington in Seattle, the late Halbert Robinson, Wendy Roedell,

and Nancy Jackson, are attempting to develop special identification measures.

The Roeper School in Bloomfield Hills, the Retrieval and Acceleration School under Dr. Merle Karnes at the University of Illinois, the Astor Program in New York, and others, are attempting to identify very early what happens.

Now, what are we using to identify these youngsters? We are using IQ scores. We are also using observation skills by parents the keeping of an inventory. By the way, baby books. Dr. Betty Wagner, who is in infant development at Texas Tech, and I did a study on thirty families in the Lubbock community, ten Anglo, ten Black and Chicano, and we found that the best predictor of parent excellence, including environment in the home, was the baby book.

Anecdotal records by nursery teachers being able to tell what is happening that is unusual in the child's behavior.

Yesterday, just before I left, I substituted in a class, Courtship and Marriage. Somebody asked whether I was on time, and I said, "No, late."

And we had a child in front of the class

and we demonstrated, by question and answer from the child's point of view, and of course the child from the gifted program answered very unusual answers. And some of the students said, "That isn't what I expected that child to say."

And I said, "Yes, I know."

Humorous events, parents remembering things where they indicate that what happened was odd or, as they tell about it, "funny".

Checklist methods -- what do we usually expect of the child and what is the child doing. Developmental milestones are noted according to age levels to determine where the responses and behaviors are being demonstrated.

There are six measures that are used to bring children finally into our program. Three are measures of the child -- the Stanford-Binet, the KRISP, the Kansas Reflection-Impulsivity Scale for pre-schoolers, and the pre-school Embedded Figures Test, because we think this tells something more about the child's mental structure than just the Stanford-Binet.

Two parent measures, one from Charlotte Malone, who worked with young children at the Rhodes

School and, before that, at La Jolla, a behavioral identifying characteristics, and a checklist from Laurie McCann at Arizona State, and, finally, a rating behavior that Dr. Joseph Renzulli very generously allowed us to adapt for working with parents from two to five.

The results of our bringing these children into our program, I just wanted to mention to you, come in looking at the parent who called to find out, can his child get into Johns Hopkins later? When we first brought him into the program, his IQ was -- and I will say "only," for it is really not gifted -- 128. He was reading from a fourth grade level book when I examined him and, at the present time he has been, through our public school system and strenuous effort on the part of his parents, matriculated, this fall, in the fifth grade.

He is now working at the science level at 12.6 and his lowest scor is at 7.4 in language. He is eight years old and no, you are right; the IQ did not register this extreme skill. His social abilities were very poor when he first came to our program. Right now, the fifth graders accept him as one of them. He is a good performer. When I talked

to his father, just before leaving, he had not yet made less than 100 per cent on any paper that he had turned in.

I urge that we listen to our first panel and that, at the pre-school

level, we pay attention to the coordination of families, schools, and teachers, that we provide catalytic funds at the early levels and role models that can be carried out by both our parents and our teachers. Thank you. (Applause.)

Commissioner BAKER. Thank you, Professor Steele, for this stirring account of the gifted and talented.

And moving further in this context, we welcome now a discussion by Dr. Isa Zimmerman, Assistant Superintendent for Instruction of the Lexington Public Schools.

Dr. ISA ZIMMERMAN. This is a story about a rather small high school amid hundreds of thousands, a dot out of the universe, but a comprehensive dot. Comprehensive high schools, by definition, have been designed to be all things to all people. They look the same; they don't always succeed. But, by being all things to all people, it also means that we can provide education for the gifted and talented.

When we think about high school programs for those children, those youngsters, we think principally of two kinds of giftedness -- talent in a performing area, music, art, drama, athletics,

practical arts, writing, and speaking -- and giftedness in intellectual terms, academic kind of talent, the heavy brain power.

For many years, in both small and large high schools, it has been possible to provide outlets for students talented in the first area. Communities appreciate, to a greater or lesser degree, depending upon their nature, student performance.

The ideal kind of gifted and talented program has, in the minds of many people, the following characteristics. Children are grouped by ability. Part of the school day is given over to special instruction. Talented students are allowed time to share their talents with students at other schools in the area and even throughout the state or the nation. Young people should be advanced according to their talents, rather than their age. And, finally, these young people should have special teachers, uniquely trained and highly paid.

Now, if this all sounds familiar to you, it is because it defines the athletic programs in most high schools, and perhaps, also, the drama, the music. In my particular high school, it applies also to the Art Club and the Physics Club and the Math Team.

Even if the school is too small, which I find one of the major concerns in providing for the gifted and talented, to offer some of the activities I have just mentioned, the model for extra-curricular programs, athletic and otherwise, is available and known. Anyone making a suggestion to start up such a program at any school in the country does not have to educate the community about feasibility, only about validity for that particular school district. It is in the area of superior mental ability that you run into trouble, not the area of superior motor ability. In the latter, we find ethical, educational and psychological difficulties in offering the program that I described above.

Still, if any school environment deals with it differently, it seems to me that the comprehensive public high school, to show my prejudice, can do it best, precisely because of its mission.

The constraints found in many elementary gifted and talented programs, which has classes that are self-contained and, therefore, those programs must be pull-out programs that play havoc with teachers' patience and their accountability, are not a problem at the secondary level. Students select

their own courses, and levels, and as long as the school does provide an appropriate high and challenging level for gifted and talented students, they are not required to miss any instruction, nor to annoy the institution by their special demands.

At Hamilton-Wenham, which is the school that I have just come from, we have honors level courses which we describe in the course catalog as, "An accelerated program which may favorably prepare a student for admission to some schools listed in Baron's Profile of American Colleges as most competitive or highly-competitive. The program in some disciplines may enable a student to apply for advanced placement in college."

In Lexington, where I am now working, we have what we call AP courses for these very same students.

With such an arrangement, the issue of identification becomes less of a problem. One doesn't have to, or one can, if one wants, use an IQ score as a measure to determine whether a student can be in such courses, but, more often than not, students and parents are aware of the demanding nature of the high-level courses and students select themselves

into these courses. When parents insist on overriding the school or teacher recommendation, it has been the policy of all the schools with which I have been connected to allow the override, since we all know quite well that the student will find his or her own level in the course.

It is also important to note that, in honor schools like Hamilton-Wenham and Lexington, we do not track, and I believe that that is a State Law in Massachusetts. So it means that a highly-talented student in mathematics does not have to perform at the same level or even in the same class in a foreign language; so that he or she may take French at a lower level, or vice versa.

Again in this situation, a small school may be more constrained than a larger school by the nature of its schedule, but the theory is there. A student need not be tracked by either his or her lowest or highest subject abilities. Students select themselves or parents select them on the basis of past performance and teacher recommendations. Those are the two primary forms that we use.

Two populations that we were particularly interested in at Hamilton-Wenham were the learning

disabled gifted, and what we did with them was that we always placed them in the highest level possible and then provided them with appropriate back-up in the resource room. And then, we were also interested in the unmotivated gifted, and what we gave them, in addition to their courses, was a lot of counseling we felt was badly needed.

Because, at Hamilton-Wenham, the community did not want to specifically commit itself to supporting a gifted and talented program, -- and this I have found to be the major obstacle to our success with such a program -- we never categorized any of our special opportunities as anything but that. We, ourselves, knew that we were offering advanced and challenging material in our honors courses, but we did not want to wave a red flag by calling them "gifted and talented". Even calling them honors courses occasionally initiated some battles.

Because of this school of interest in gifted and talented programs, we had a task force of teachers and administrators which examined the issue, and even did a small study to see how well we might or were identifying in serving students in the gifted and talented range.

The school psychologists and counselors administered the individual intelligence tests to 17 juniors and sophomores in a sample of 23 who were invited to participate. The range was the typical range between 133 and 152 IQ, with a mean of around 142. Among these students were some who were high in rank in class, but not high on group IQ tests or aptitude tests, and vice versa. Several additional tests were given in order to discriminate among these competent students for learning and thinking styles, creativity, and reasoning. What we learned, we felt, is that there are enough measures, if a person will always use multiple measures, extant to determine on an individual basis what kind of unique programs could be devised for students in a high school who are in the gifted and talented range, if one wanted to tailor programs specifically for these youngsters.

Several other opportunities that are already available in comprehensive high schools that I would like to mention are things like directed study or independent study, mentoring with an individual teacher. We have several teachers who are able to provide such mentoring in physics, in writing, in history and art, and in music, and then, most recently,

in the last year in computers. These are strong teachers, very knowledgeable, immersed in their subjects, who encourage youngsters to spend all of their free time with them during and after school and, sometimes, even on weekends -- "inspirational," in the words of Dr. Kinsbourne.

As with students, it is important to allow teachers choice. There is nothing worse than a teacher, especially at the high school level, who is afraid of bright students, or who feels that he or she is teaching beyond his capabilities. At a comprehensive high school, the probability is that there will be a small, at least, group of talented staff who will be eager to work with honors level youngsters. Many of these teachers develop special materials -- in our case, in critical thinking, special projects in science and social studies. They encourage students to write, we allow them to be published, and we took them to conferences and to meetings of professionals in their field.

A group of our teachers wrote a Commonwealth in-service grant to get some training so that they could learn more strategies to enhance their teaching of gifted and talented students, and found,

as have teachers who have been working with 766 youngsters, that the techniques were applicable across-the-board for all students.

Our school district allowed the high school principal to join forces with other schools in the geographic area to organize a conference on the gifted and talented as a way of underlining the importance of the issue, even though they did not allow us to make it a goal for the school district, and allowed a large number of teachers to attend and encouraged parents to attend as well.

After that dramatic start-up, teachers have been allowed and sponsored in their attendance at other conferences in taking courses based on their interest in gifted and talented education. Programs for professional development of staff are, of course, essential on all levels of education, but certainly for gifted and talented teachers.

Publicity about that conference, our constant discussion and communication with parents about their own children, and our writing about any special programs that we ran in our newsletter constituted our community relations program. Our relations with parents were good enough that, when

our physics teacher, working with the Chairman of the Physics Department at Boston University, set up a special summer program for juniors from all over the United States, to enable these juniors who had already taken physics to have an opportunity to work with research scientists in the Boston area, -- they called this the Research Internship Program and it was funded, in the beginning, by NSF and, later on, most recently, by Boston University -- parents in the Hamilton-Wenham area were more than willing to come forward and act as hosts and chaperones.

This program grew out of a desire on the part of the Hamilton-Wenham establishment to provide for special high school talent, but there are many other such programs all over the country.

Other alternatives allowed included permitting gifted and talented students to take courses at the college level, -- we are lucky to have Gordon College nearby, which makes it very easy; they are a very good neighbor -- or to accept specialized instruction, such as music lessons, during regular school time. And, if one is lucky enough to get an artist in residence, you are still further ahead; we were lucky enough to do that.

Many schools also allow seniors who have demonstrated above-average ability to do an internship in the last segment of their school year. We have had an internship for the senior class, since 1976, and we have allowed students to go on to early graduation for full-time college attendance.

One element of the gifted and talented education which is often overlooked, something which is needed, again, in the high school setting, is counseling. Many people feel that gifted and talented children can take care of themselves. Many can. But, for those who have felt separate and different for too long, counseling is essential.

Career counseling is also important for them because, without it, many of these students would have selected a traditional future.

A few of these students participating in this course of study thought in terms of multiple sequential careers. The girls in this course of study said that they were indeed going to work in a profession, but for only a short period of time; they would become homemakers after that, albeit admirably educated homemakers.

One last interesting result of our school

study, we indicated on the transcript of our 17 students that they had been identified and participated in the study. My Guidance Department told me afterwards that the Admission Offices of the colleges to which they had applied let it be know that they had been influenced by this fact.

I have tried, in this brief overview of my experience in my schools, comprehensive public high schools, to touch upon, student identification, teacher preparation, programs, community relations, outside resources, and support services. We as a society provide so much for our handicapped youngsters. Most teachers are trained to provide appropriate services for the middle-range student. We should at least provide appropriate education for our truly gifted and talented, since they are the ones who will lead us in the future. We cannot afford unruly, undisciplined, under-challenged, inhumane leaders. Thank you. (Applause.)

Commissioner BAKER. Thank you, Dr. Zimmerman, for leading us eloquently into further understanding of what happens to the gifted and talented in the present educational practice. So, we have seen, now, the primary school, the secondary school examples, and

we move to have the report of Professor Alexinia Baldwin, Professor of Curriculum and Instruction, the Department of Program Development and Evaluation of the School of Education at SUNY, Albany. Dr. Baldwin.

Dr. ALEXINIA BALDWIN. Thank you, Commissioner Baker. I come as the last person on this particular panel, following the august body of the first panel, agreeing with everything that they have said because, first, we have worked together on many occasions and have sorted out many of the concepts that were discussed, but I think that I would be less than true to myself, if I didn't bring to this Commission another point of view about another population, and I would like to provoke some thought into that particular area.

I have selected today a title that might be provocative in its conception, and I hope it is, "The Gifted Minority Within a Minority," and I would like to ask this question:

Is there need for affirmative action in the area of education of the gifted?

This is a provocative question, as I have said; but, in a country which boasts of great natural

natural resources, semantic interpretations of the use of "equal" and "same" in our Constitution has often caused its greatest natural resource to go unheeded and underdeveloped. This natural resource lies in the exceptional potential of its gifted citizens.

And I must say here that one of the reasons I joined Dr. Joseph Renzulli's first class was because I had the occasion to teach a group of children who were not considered for the regular program for the gifted, and I was convinced that my conceptions of their abilities were accurate.

The most recent census data that was available to me before I came to this meeting was on children from ages 5 to 14. The data indicated that the non-white population of the U.S.A. is approximately 8.5 million or 28 per cent of the population. Using this as a point of reference we must ask the question nationwide, "Do our programs for the gifted reflect this proportion of the population in this age category?" This question must also be asked in local communities. Do the programs for the gifted reflect equivalent community percentages and ethnic groupings?

A large segment of this exceptional-potential

pool can be found among persons of socially disadvantaged backgrounds and/or minority ethnic groups. Hence, the loss to our nation will be even greater if we neglect to identify and program adequately for the emergence and/or the enhancement of this population.

Of course, we are concerned about legislative regulations as well as funding, and I think that Dr. Gallagher has emphasized the importance of having some Federal funds, so I won't go into those details at this point. But there has been an amazing lack of empirical research on the processes involved in locating and providing for the gifted child from disadvantaging circumstances. This is understandable in light of the paucity of empirical research in the area of education of the gifted in general, so you can see that, in this area that I am emphasizing, we need even more research. In order to set the wheels in motion to address this problem, there are many concerns to be considered. The main concern which affects subsequent operational activities such as research, such as identification and programming of our children in this group, is ATTITUDE.

Attitude is important in that it

establishes a philosophy or mind-set for approaching the problem. A start toward this goal would be the acceptance of the assumption that giftedness exists in all human groupings and that this giftedness does not manifest itself in a manner which can be genetically ascribed to that grouping. Culture and environment do, however, play important parts in developing a penchant for certain activities and skills, but specific groups of behaviors cannot become a generalization which describes the innate capacities of this particular group. To do so would be erroneous in that the experiential groups within the black ethnic social structure, for example, are quite diverse and the physical and mental structures are just as varied. This is evidenced in the fact that, throughout the history of minorities in America, the exceptional accomplishments of scientists, historians, businessmen and women, and educators have been chronicled, and bear witness to the array of potential which exists in these populations.

Now, other attitudes that are endemic to the area of education of the gifted create an even greater problem for those persons who are from culturally different backgrounds and are economically

deprived. Statements such as, if he is gifted, then he or she really needs little help and, regardless of the circumstances in life, true giftedness will emerge. To be sure,many persons from low socio-economic backgrounds have contributed many creative ideas which we as a nation and world have taken for granted. Can we afford to overlook those potentially gifted children who might have been considered impudent and unacceptable for inclusion in programs for the gifted? Marva Collins of Chicago did not consider her program one for the gifted, but she has shown that a positive self-concept and high expectations can be a winning combination among children who suffer the problems of cultural diversity.

Many ideas were given to the world by men and women who would have been unable to pass the standardized IQ tests and these few represent the small per cent that used their gifts constructively. There are many others who used their abilities in rebelliousness, in destructive behaviors, or just simply dropped out.

A study by Douglas in 1970 should give us pause for thought in the 1980s. Douglas reported that, of the projected 7.5 million dropouts at that

time, approximately 10 per cent or roughly 750,000 would have an IQ score within the top 25 per cent of the population. Given that such a large percentage of our dropout population is classified as minority, the potential waste of abilities is staggering.

I could go on with many more things, but for fear that the timer will sound on me, I will address some propositions that I have, and those that know me know that I could talk on and on about this area.

First, we have already established the fact that IQ tests really don't do what they are purported to do, and this is especially true with children in the population that I am discussing.

We know that there have been studies by the infamous or famous Jensen and others, and these studies have served as a catalyst for certain mind-sets regarding the innate abilities of various ethnic groups. However, Stephen Jay Gould's Mismeasure of Man, the September 1979 issue of Psychology Today, the Harvard Education Review's presentation of the arguments pro and con on the Jensen papers are typical publications that are serving the purpose of exposing the fatal flaws in our thoughts on the

sanctity of the IQ test.

I would like to offer two propositions regarding identification of the gifted minority within a minority.

Proposition 1, and a prologue for that proposition, identification of gifted children has been difficult due to a lack, in large measure, of adequate attention to non-academic or performance indices of giftedness. Biographies of undisputedly gifted minorities, extensive literature reviews and experiential data have led to the assumption that observation or knowledge of the above-average quality of certain behaviors can lead to a more accurate identification of gifted children from disadvantaging backgrounds.

More specifically, I propose that:

1. observable behaviors are indicators of the type and quality of the mental processes an individual possesses;

2. that recognition of these behaviors can be taught.

While further longitudinal data is being collected to verify this proposition, an article titled, "Test Can Under-Predict: A Case Study (Phi

Delta Kappa, November, 1979) indicates that this process has great merit. A performance assessment scale which is presently being developed holds promise for assisting the identification process.

Proposition 2. Identification techniques for selecting gifted children for placement into programs have moved from the use of single identification instruments to the use of multiple identification instruments. Nevertheless, too often, the purpose of the identification techniques has remained the same. The assumptions have been that exceptional ability in any area of human endeavor provides a clue to the possible existence of underdeveloped ability in other areas of endeavor and that giftedness can be exhibited in many ways, each having the same status in rank of importance.

Several multi-dimensional techniques are being used throughout the school districts of this country and, of course, my paper gives you some information on some of those instruments, and I won't list them at this particular time, but a current research project designed to clarify areas which best identify children of the inner city is being conducted in New York City, and that information I had hoped

would be available before I came to this meeting; it will be available soon.

Now, going on to programming, which was really what I was supposed to do, I will give two or three propositions quickly.

The emphasis should be on the high-quality of curriculum design and instructional strategies, and I must emphasize here that we don't mean that we have a special piece of curriculum material that we would bring to the children from the disadvantaged areas. The same curriculum, but different teaching strategies, should be used, where we would emphasize the strengths and work on developing the weaknesses of that area.

So I propose that a classic premise in education, that we take a child where he is and help him to go as far as he is capable of going, is relevant for your recommendations for planning. The lock-step approach to this development, of course, cannot be used.

Proposition 2 would be that we make a learning environment one that would take care of the needs of the child so far as the open-ended activities, and the teacher who has had some kind of training that

would get them prepared for teaching these children.

No. 3 is that there be mentors that would be selected to work with these children, as has been mentioned before.

And last, but not least, I propose that serious consideration should be given to programming which starts as early as kindergarten and includes the family and community. A cooperative family community plan which not only allows for an emergence of talent, but also provides a stimulating environment for those who don't possess outstanding talents would be highly acceptable in a community.

Let me close with just this quote, and I want to qualify my statement by saying, we will not find all programs or all plans or all children who come able to make high scores on the IQ tests. We will find many children who are involved in the programs, but there are so many that are left out. And I would like to end by saying:

> "It is important to note that there is no magical formula that will fit all children of this grouping. The secret lies in the awareness of causal factors, the perception of behaviors, indicative of giftedness, and

systematic planning that capitalizes on the strengths while, at the same time, plans for vertical progression for weaknesses. This planning does not revolve around remedial work for deficits, but around supplying environmental stimulation that will unlock the potential ability of the child. The content vehicle for unlocking this potential should wisely reflect the traditions and familiarity of the culture and environment. A caveat at this point would be that inclusion of familiar reference points in content does not mean the exclusion of unfamiliar reference points because herein lies the danger of closing or limiting the trajectories for growth."

Thank you very much. (Applause.)

If I may add, on your paper that I have given you would be a chart which lists the possible causal factors and procedures for assisting in that area. Thank you.

Commissioner BAKER. Thank you, Professor Baldwin, for these very creative proposals.

We now ask whether there are comments or queries from the Commission. Commissioner Foster.

Commissioner FOSTER. I have a question for Dr. Durden. This is not a long question, provided that you have the answer in your paper that you are submitting to us, which we have not seen yet. Could you tell us how you select the students to go to your summer school in Pennsylvania for Johns Hopkins for the gifted and talented.

Dr. DURDEN. All right. Again, I did not want to go into any great detail about any one specific program, but it is not in the paper. And it is not just a program in Carlisle, Pennsylvania; there are a number of sites.

It is a two-step screening device. Again, I will say this. The program at Hopkins, which is not an early entrance college program, but it is restricted; there is very much a sense of limitation about what we can do and those types of students we are trying to help. It is specific academic talent, verbal, mathematic, and reasoning ability.

The first screening device, for seventh graders, would be in-grade achievement tests -- California's, Iowa's; 97 percentile or above, mathematical reasoning ability, verbal, or composite scores.

The second element, and this is somewhat controversial an issue. The second element is the SAT examination, all parts, in seventh grade.

Commissioner FOSTER. It is competitive, then, for entry?

Dr. DURDEN. It is competitive. One aspect of our program -- and now, it is quite diverse, quite large; but, for entrance into the programs which we ourselves run, yes, there are cut-off scores, but we try to encourage other programs with varying cut-off scores and varying requirements.

Commissioner FOSTER. I have one more, if I may. Professor Steele, I think you stimulated a little curiosity. Would you tell us a little more about your daughter, where she is today?

Professor STEELE. I don't know whether I wanted you to ask or not; even that is a little frightening. My daughter, now, is living in Barrow, Alaska, has been there since she was employed by VISTA after graduating with honors from Middlebury College in German literature. She gave her junior address to the University of Mainz in German, insisted that she not do it in English.

She got her address to the University of

Mainz by traveling up and down the Rhine River and collecting the myths about Barbaroza from the priests in Germany.

After graduation from college, she said, "What do I do with German?"

We said, "We don't know."

And she then went to VISTA and worked with the Mayor of the North Slope around Barrow, Alaska, and found that the United States Government was not honoring any of the requests that she sent in for protection of the Nupia Tribe from invasion by businessmen and the U.S. Government of Prudeau Bay.

Then she went to work at $25,000 for the Mayor, when he found out that she was so much on their side, fell in love with Abel Oc Pic of the Nupia Tribe, an Eskimo of the Nupia Tribe, married him, two and a half years ago, now teaches after she commuted to Fairbanks to receive her Master's Degree in Secondary Education.

Future, I don't know. She is thirty years old. She skipped the first course in calculus, saying that it was of no value to her, and speaks five languages.

Commissioner FOSTER. Thank you very much. Is

that in your paper?

Professor STEELE. No, sir.

Commissioner FOSTER. Thank you.

Commissioner HOLTON. Well, what we have heard, or much of what we have heard makes one feel confident that large groups of gifted children will be discovered and might make a good career in this great country. But I feel very uneasy, particularly about the challenge brought to us in the last presentation, the relatively less easily identifiable gifted, which this nation may need just as much as all those whom doting parents will be able to further, if there is a need.

There are, it seems to me, two barriers to reaching to that part of the pool of potentially gifted. One is the obvious discrimination, another societal barrier external to the family and home, and the other, which I want the panel to tell me something about, is clearly within the family and home.

And that came to me in a rather striking way when I tried to run a national program for physics in the schools, many years ago, triggered by the NSF, and I wanted to see who were our tryout students, and

there were some 20,000; I wanted to keep my eye on the most gifted.

And they were only identified by numbers. And one of the very top persons, during the year, did very well, of course, but suddenly came down toward the bottom. And I wanted very badly to find out what went wrong, and I discovered that this child, in an unusually deprived home, simply was told by the parent, by the father, that he had better not show up the old man and get back to sense, not have academic aspirations, but make a living the regular way.

I say this, and I don't want to be misunderstood, because it is true in the history of science that we find cases like this. Fermi, Enrico Fermi was saved from becoming an employee in the railway system of Italy, which his father was and was very comfortable with, by an office mate of his father who discovered the genius in this child and fed him mathematics books. The external ladder was very important in the case of many of these scientists that I know; outside the family, in other words, whether deprived or not, as we would traditionally say.

So here is, then, my problem, what to do?

What to do, if we take seriously this challenge and look for the very talented that this nation so badly needs, when the barriers are not only outside, but even, also, within the family situation? What does one do?

We cannot kidnap them and then take them to Texas, and then on to Lexington, and then on to Johns Hopkins.

Dr. DURDEN. No, no; Harvard is fine.

Commissioner HOLTON. Therefore, what I would really say is that what we need is very specific and challenging projects to be proposed to us, within the next month, during which the record is open, going beyond anything I have yet read. Would you care to comment on my unease?

Dr. BALDWIN. Well, I tried to propose that the family be included in planning for the future, and I think you will find so many different feelings about culture. In fact, I just talked with Mary Hunter Wolfe, and she was sharing with me some things that she had found, that people really thought that being gifted was something that you did within the family, not necessarily outside as we have been defining it here.

So I think it is important for us to include the family in the planning, and perhaps there might be -- we are in the prehistoric era, in a sense, of seeing just what we should be doing, but perhaps we should explore ideas where families as well as children are included in whatever planning we do for them.

Dr. ZIMMERMAN. May I add a comment as well? I see this also as a function for the school. What I have found, working with the people that I have had an opportunity to work with is that, when a teacher or a school administrator discovers tremendous talent in a student and finds that there are some barriers in the home, I find that those teachers, particularly if they are the kind that we have been talking about, the inspirational kind, will advocate for the student with a parent. And I have known of cases where, because a teacher went to the home and spent hours with the family, the child, the youngster, was able to participate in something that originally the parents said, "No, we don't want you to."

So, I see that as an outreach role for the school. It cannot be mandated, I don't think, but it certainly can be encouraged on the part of

individuals who really care about youngsters at that ability level.

Chairman GARDNER. Mine is a question in the form of an observation, which could require more time than we have to respond; and I hope, as you reflect upon it, you might share your views on this.

A theme running throughout all of the presentations, late morning, has been the one of attitude -- the attitude on the part of the kindergarten teacher who was uncomfortable with keeping your daughter in school; attitudes of a kind to which Professor Baldwin made reference; attitudes on the part of the parent who was unsympathetic to the approach that was just referenced, and so forth; attitudes on the part of the young people at the Johns Hopkins School who, for the first time, feel comfortable in that environment, which suggests that they were uncomfortable previously.

What is there that causes these attitudes to be reflected in so diverse and so frequent a circumstance?

The reference that Professor Zimmerman made to the grouping of children by ability, special programs that are made available during the school

day for those children, the interaction those children have with students similarly situated at other schools, after school opportunities, and so forth, which describes the athletic programs offered by schools and, I might add, universities and colleges, as well. These seem to be quite acceptable, not only acceptable attitudinally, but acceptable financially. And it is a permanent part of our infrastructure, if I may put it that way, as one of our morning speakers suggested.

Now, why is that acceptable? And yet, efforts to gain a comparable recognition, albeit in a different context, for those who are gifted in other ways? Why do we confront this resistance? What is there that gives life to it in our society, and what recommendations might this Commission make that would have some bearing on the attitude of people in respect to this issue in its various dimensions?

We hardly can answer that question before lunch, but I wanted to get it on the record, and anyone here who would be willing to take the time and the thought and the effort to share their views with this Commission, those would be both received and

most welcomed.

Commissioner BAKER. I think that Chairman Gardner has brought full circle the concerns we encountered at the beginning this morning that Dr. Gallagher spoke so forcefully about, that our society, our nation, is not really prepared to recognize the values and the needs here.

This panel joins the one earlier this morning in giving us deep insights and very welcome wisdom into how we can pursue this further. We thank them sincerely, and we shall now be adjourning for lunch, but shall reconvene promptly again, at 1:15.

(Noon Recess.)

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